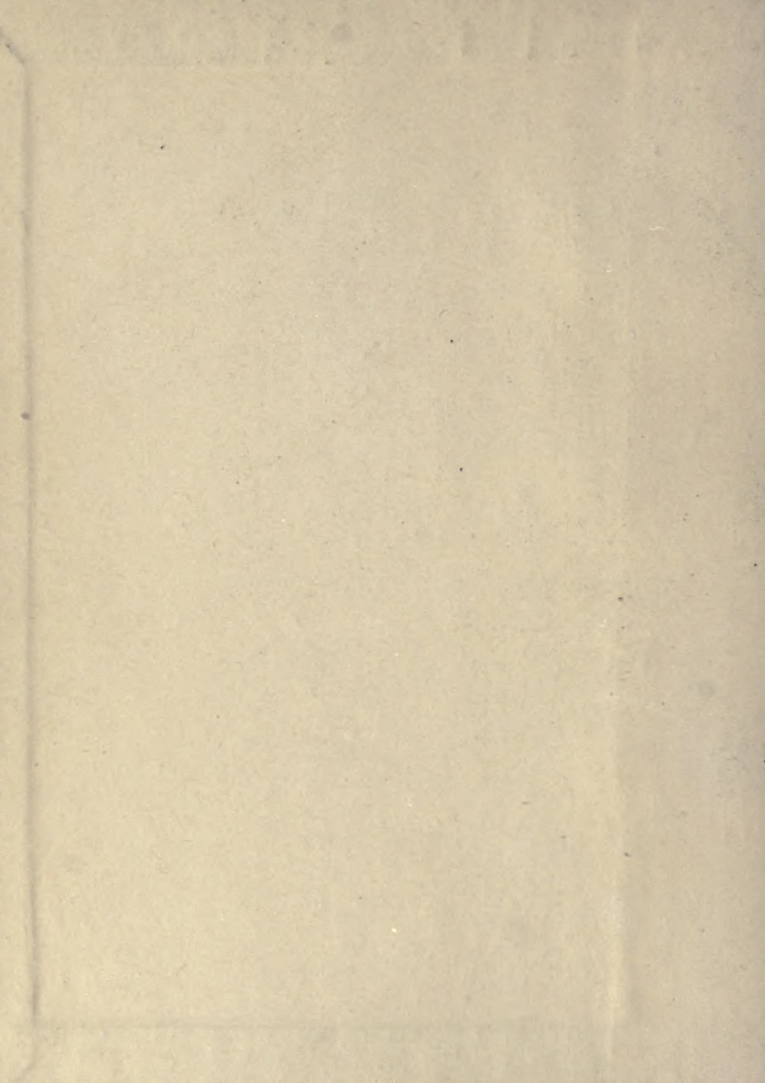


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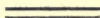
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CURRENT RAILWAY PROBLEMS

By

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PUBLISHER'S NOTE.

Every student of affairs is aware that the transportation questions now foremost in discussion widely differ from those that were paramount even a few years ago. The admitted abuses in railway administration of the past generation have mostly, many of them, entirely disappeared. The current problems more nearly concern the fundamental status of the railways and their primary relations with the public. To their solution is necessary earnest, sincere and deliberate consideration. The articles collected in this book by the *Railway Age Gazette* were written by its Western Editorial Manager. For the permission to reproduce that on "The Valuation of Railways," and that entitled "Shall Railway Profits be Limited?" thanks are due to the *Journal of Political Economy*. These discussions are here reprinted because they have received many commendations as a worthy contribution to the enlightenment which the people of this country are now seeking upon the subjects of which they treat.

RAILWAY AGE GAZETTE.

VALUATION OF RAILWAYS, WITH ESPECIAL REFERENCE TO THE PHYSICAL VALUATION IN MINNESOTA.¹

During recent years there has been much discussion of valuation of the physical properties of railways as a basis for public regulation of their rates. The subject has been moved a good way from the field of academic theory to that of applied theory by the exhaustive physical valuation of the railways of Minnesota which recently was completed by the railway commission of that state.

There were "physical valuations" before that in Minnesota, notably that in Texas in 1894; that in Michigan in 1900; and that in Wisconsin in 1903. But the valuation in Texas recently was admitted by the engineer who made it to be entirely out of date; and it never was entitled to much respect.² None of these valuations was so exhaustive as that in Minnesota, and those in Michigan and Wisconsin were made as

¹ An article by the writer having the above title was published in the *Journal of Political Economy* in April, 1909. In view of subsequent developments regarding the question of valuation of railways it has seemed worth while to make substantial additions to it. The additional matter is enclosed in brackets. The article is here reprinted by permission.

² "Doubtless many of them (the railways) are now considerably undervalued by the commission. The valuations now in use were made in 1894-6 when land, rights of way, terminal facilities and construction materials were at their lowest value. In addition, the commission has not given the roads any credit for the permanent improvements made by them, the general settling and seasoning of the properties, or the advance in value due to the general growth of the community. If a thorough revaluation were made by the commission it is believed that the margin between actual value and capitalized value would be wiped out in the case of many roads."—"Railroad Transportation in Texas," by Charles S. Potts, Adjunct Professor of Law and Government, University of Texas; page 155.

bases for taxation, not rate-regulation. The Railroad Commission of Washington finished a physical valuation of the railways in that state for purposes of state-regulation at about the same time that the Minnesota commission completed its work. But the valuation in Washington relates to only a few roads, built and operated under somewhat unusual conditions, while the Minnesota valuation relates to nineteen carrying and six switching, or terminal, roads, having an aggregate line-mileage of 7,596 miles and an aggregate track-mileage of 10,438 miles, built and operated under physical and commercial conditions similar to those in a large part of the country. On the whole, it is believed that the valuation in Minnesota affords the best materials in existence for what may perhaps fittingly be termed a "concrete" study of valuation as a basis for rate-regulation.

A brief study of this sort will be attempted in this article. I shall try, first, to describe, and, second, to discuss the method and results of the valuation in Minnesota; third, to outline the only method of valuation that, it seems to me, finally will stand the scrutiny of enlightened economists or of the Supreme Court of the United States; and, fourth, to indicate in what ways, and to what extent, a fair and legal valuation could advantageously be used as a basis for rate-regulation.

[The foregoing did not do entire justice to the valuation in Washington. The commission of that state decided that, as is contended later in this article, a valuation for rate-making purposes must, to comply with the decision of the federal supreme court in the Nebraska rate case, take account not only of the value of the physical property of a railway, but of all elements that enter into its value as a going concern. For a description of the method used, see an article by J. C. Lawrence, a member of the commission, in the *Railway Age Gazette*, February 18, 1910, page 359.]

I.

The plan of the Minnesota commission contemplated a valuation based solely on the original cost of construction and the estimated cost of reproduction of the physical properties. Mr. Dwight C. Morgan, an engineer of experience and ability, was employed to take direct charge of the work. Mr. Morgan found that records to show the original cost of the older and more important lines were not available. The valuation made is, therefore, based solely on the estimated cost of reproduction of the physical properties, new, and also in their present condition.

[In other words, the commission started with the premises (1) that the value of the railway was merely the value of its physical properties: (2) that the value of the physical properties was what it would cost to reproduce them; and (3) that rates should be so regulated as to limit the roads to a "fair return" on this cost, or value. The words "cost" and "value," it will be noted, were used as synonymous and interchangeable, although they certainly are not so used in any other practical business affairs whatever. Nor are they synonymous by any definition of the technical economists.]

A meeting of the members of the commission and its engineers with railway officers representing 95 per cent of the mileage in Minnesota was held on January 26, 1906, and a plan of co-operation agreed upon. The wages and prices actually paid in 1905 were adopted as unit costs of labor and materials. A subsequent review showed that the wages and prices of that year were about the average for the five-year period, 1902-7, and the valuation was made as of June 30, 1907.

The railways were supplied with blanks prepared by the commission on which to enter, with estimates of their cost of reproduction, all the multitudinous items composing their physical properties, from land for right-of-way, yards and

terminals to locomotives and fish-plates; from the brick in the large passenger stations in Minneapolis and St. Paul to the smallest shop tools; from the draw-spans in the bridge across the Mississippi river to the timber in culverts. A complete set of blanks was filled out for each 100 miles of main line; branches were treated according to their special conditions.

After the blanks were filled out and returned by the railways, representatives of the commission checked them by a thorough and elaborate method.

The railways provided a special train, consisting of a locomotive and business car, for which the state paid the actual running-cost. One or more members of the commission and two of its engineers, accompanied by general or division officers of the road on whose line the train happened to be, went in this train over each road. The detailed reports of the road were taken along. The train moved slowly to permit constant observations of the character and standards of construction and maintenance. Frequent stops were made, often once in a mile, usually once in two miles, sometimes only once in five miles, when the party got out, and the commission's engineers ascertained the amount and nature of the ballast for some distance along the roadway, the depth and character of cuts and fills, the weight and age of rails and fastenings, the number of ties per mile, etc. The facts found were constantly compared with the reports of the railways, and noted in the engineers' field-books. The terminals in Minneapolis, St. Paul and Duluth were examined foot by foot. Stations, shops, cattle-pens, etc., were investigated, and the railways' reports about them checked with the same thoroughness.

Rolling stock used on interstate roads was appraised on a mileage basis, it being assumed that the standards of each interstate road were about the same for its entire line as they were in Minnesota.

To ascertain the cost of reproduction of land used for

right-of-way, yards and terminals, the commission sent special agents throughout the state, who examined the official county records to find what prices had been brought by land that had been sold since January 1, 1900, within one and one-half miles of any railway. Particular pains were taken to find what railways had paid for land for railway purposes subsequent to the date named. In reaching a determination of the true value of lands adjacent to railways records of 55,000 bona-fide sales, aggregating 1,300,000 acres and involving considerations approximating \$100,000,000 were used. Records also were used of bona-fide sales of land to recently built railway lines, aggregating 7,000 acres, located in various parts of the state, and involving considerations amounting to \$4,200,000.

The investigations of the commission showed that it cost an average of about three times as much to get land for railway right-of-way, exclusive of the terminals at St. Paul, Minneapolis and Duluth, as to get it for other purposes. It was found that to get land in St. Paul for terminals cost an average of one and three-fourths times as much as to get it for other purposes; in Minneapolis, one and three-fifths times as much; and in Duluth, one and one-fourth times as much. It was also found that where a railway bought land by agreement it usually acquired it cheaper than where it got it by the exercise of the power of eminent domain through condemnation proceedings.

[As has already been remarked, one of the premises of the commission was, and one of the premises in most arguments for "physical valuation" is, that "cost of physical production" and "value" as applied to a railway are synonymous terms; and it may seem as if it would be very easy, if this assumption be correct, for engineers to find the "value" of a railway. But important differences arose between the commission's engineers and those of the railways as to how even the cost of reproduction should be ascertained.]

There was a sharp cleavage of opinion (for example)

between the commission and the officers of the railways over the basis on which land used for right-of-way, yards and terminals should be appraised. The railway officers contended that the valuation should be based on what the data collected showed it would cost now to acquire the land for *railway* purposes. The commission contended that it should be based on what it would cost now to acquire the land for *other-than-railway* purposes. In other words, the commission's view was that if farm lands were worth \$100 per acre, adjacent railway right-of-way should be appraised at \$100 per acre, not at \$300 per acre, the price that the data collected showed it probably would cost now to get it for railway right-of-way if it were unoccupied. The result of this difference of opinion was that the commission made two appraisals, "Estimate A" and "Estimate B." In "Estimate A" it appraised railway land on the basis of what it would cost to get it now for railway purposes. In "Estimate B" it appraised it at what it would cost to get it for other-than-railway purposes. In "Estimate B" it also omitted any allowance for solidification and adaptation of roadbed.

Railway engineers usually add 10 per cent to their estimates of the cost of projected lines for "contingencies." As he was valuing lines already built, Mr. Morgan thought an allowance of 5 per cent would be enough. He allowed for interest during construction at the rate of 4 per cent.

The railways were asked to furnish estimates not only of the "cost of the reproduction, new" of their properties, but also, making an allowance for depreciation due to wear and tear, to estimate their "present value." This, with a few exceptions, they did not do, because there was no unanimity among railway officials as to the elements proper to be considered in making up an estimate of present value. The officers of some of the lines contended that, as their properties were well maintained, there was no depreciation to be allowed for; that seasoned properties were more valuable than new.

The Minnesota proportion (on a mileage basis) of the capitalization of the nineteen carrying railways in that state is \$334,979,692. The aggregate capitalization of the six switching or terminal railways in the state, with a line mileage of 18.7 miles, is \$8,003,000, making an aggregate capitalization for all the mileage in the state of \$342,982,692, or \$45,153 per mile. The railways estimated the total cost of reproduction, new, of their physical properties, as of June 30, 1906, at \$500,675,780, or \$65,909 per mile. The commission's estimates (as of June 30, 1907) compare with the foregoing figures as follows:

Estimate A.—Cost of reproduction, new, all lines, \$411,735,195, or \$54,204 per mile; present value, all lines, \$360,480,161, or \$47,457 per mile. Cost of reproduction, new, 19 carrying lines, \$397,299,471, or \$52,430 per mile; present value, 19 carrying lines, \$347,051,336, or \$45,799 per mile. Cost of reproduction, new, 6 switching lines, \$14,435,724, or \$770,933 per mile; present value, 6 switching lines, \$13,428,824, or \$717,160 per mile.

Estimate B.—Cost of reproduction, new, all lines, \$373,820,141; omitting allowance for adaptation and solidification of roadbed, \$360,961,548, or \$47,520 per mile; present value, all lines, \$322,565,107; omitting allowance for solidification and adaptation, \$309,706,514, or \$40,772 per mile. Cost of reproduction, new, carrying lines, omitting allowance for solidification and adaptation, \$350,106,321, or \$46,202 per mile; present value, \$299,858,186, or \$39,571 per mile. Cost of reproduction, new, switching roads, omitting allowance for solidification and adaptation, \$10,855,227, or \$579,718 per mile; present value, \$9,848,327, or \$525,945 per mile.

It will be noted that the average capitalization of all lines, \$45,153 per mile, is less than the average valuation per mile upon any of the bases except "Estimate B, present value," omitting allowance for adaptation and solidification of roadbed. It should also be remarked that over \$37,000,000 of the difference between "Estimates A" and "B" is due to the fact

that in "Estimate A" land is appraised on the basis of its cost of reproduction for railway purposes, while in "Estimate B" it is appraised on the basis of its cost of reproduction for other-than-railway purposes. The commission, as already indicated, regards the latter as the correct basis for valuation.

II.

The Minnesota valuation raises several questions regarding the factors that should enter into an estimate of the cost of reproduction of the physical properties of a railway. Space will permit of reference to only the most important. The commission and its engineers held that owing to depreciation in the value of equipment, rails, etc., the "present value" of the properties was less than their "cost of reproduction, new." The officers of some of the railways contended that such depreciation, if any, was offset by appreciation in value of the property due to seasoning. There is some ground for both of these contentions. A rail, a car, a locomotive, loses in market value, becomes "second hand," the moment it is put in service; and it gradually wears out or becomes obsolete. For this reason there should be some deduction for depreciation. But the roadway of a new railway appreciates in value for a number of years owing to what the commission called "adaptation and solidification." How railway engineers and operatives regard the matter is illustrated by the fact that the Chicago, Milwaukee & St. Paul began running through freight trains over its Pacific coast extension in July, 1909, but would not let even the large prospective travel to the Alaska-Yukon-Pacific Exposition at Seattle tempt it to begin running through passenger trains over the extension until July, 1910. It was felt that the line would not be safe for fast trains until then.

[The St. Paul did not even begin running fast through passenger trains on its coast extension in July, 1910, but has now postponed the establishment of this service to April, 1911, which will be almost two years after the opening of the line for freight service. While it is thus refraining, from considerations of public expediency, from operating the line to its full capacity, depreciation of the rails, ties, bridges,

buildings, etc., is going steadily on. There is, however, a limit beyond which depreciation of a composite structure such as a railway does not go. Little by little the various parts of the composite whole are being repaired and renewed. If these repairs and renewals are made as they should be depreciation of these various parts does not proceed beyond, say, 50 per cent of the original cost. The limit of depreciation on a well-managed railway is reached in about five years.¹ After that depreciation of some parts is entirely offset by repairs and renewals of other parts. Meantime, *appreciation* in the value of the physical property is steadily going on. At this moment the roadbed and embankments of the St. Paul's coast extension are being solidified; its water courses are being established; other similar changes are taking place; and for 10 years after the time of its original construction its physical property will be increasing in value, not merely because of permanent improvements representing the investment of new capital, but because of changes that take place in its track due to the operation of the railway and to the operation of natural forces on it. Other things equal, merely because of these things, the physical plant of a railway which is 10 years old or more and has been properly maintained is a better transportation machine than the plant of one that has just been finished, in spite of the fact that the former may be said to have undergone depreciation and would therefore have a lower estimated cost of physical reproduction, new, than the latter.]

Now, if there ought to be a deduction from the estimated cost of reproduction, new, of old roads, owing to depreciation of rails, rolling stock, etc., should there not be an allowance for *appreciation*, due to seasoning of the roadbed? It would seem there could only be one fair answer. Yet the commission not only deducts an aggregate of over \$51,000,000 for de-

¹ See an article by Frederic A. Delano, President of the Wabash Railroad, entitled, "The Application of a Depreciation Charge in Railway Accounting," in the *Journal of Political Economy*, November, 1908.

preciation, but also, in "Estimate B," withholds the comparatively small aggregate allowance of \$12,858,593 that is made in "Estimate A" for "adaptation and solidification."

[The correctness and validity of the valuation of the Minnesota commission has been subjected to the test of litigation in the cases involving freight and passenger rates fixed by the state legislature and the state commission. Charles E. Otis, who was appointed special master in chancery by the United States Circuit Court for the district of Minnesota to hear these cases, in his report to the court on September 21, 1910, takes the position taken in this article, viz., that reasonable allowance must be made for "solidification of roadbed," in estimating cost of reproduction.]

Another important question is the proper basis of valuing land used for right-of-way, yards and terminals. The commission found that it always costs much more to get land for railway purposes than it would to get the same land for farms, or to build residences, factories or office buildings. But it says in its report:

"It seems to us that the term 'cost of reproduction' could never have been used by the courts in a sense that would cause an entirely imaginary and artificial value to be placed upon property actually owned and in the possession of the railway. . . . We are asked to . . . proceed upon the theory that the land, although of its present value, is not in the possession of the railway, and that to acquire it it would be necessary to pay this additional amount known as the railway value. The result of this would be that the true, or market, value of the land would be disregarded and an artificial value placed upon it, on an hypothesis that has no existence in fact."

It seems to the present writer that the method the commission favors, not the one it opposes, disregards the actual facts. The question being considered is what constitutes the "true, or market, value" of land for *railway* purposes. Land has one value for farm purposes; it has another value for city-resi-

dence purposes; and another for railway purposes. Its value today for one of these purposes may be \$100 per acre, and a little later \$200 or \$300, and the amount that it will bring at any given time for the very purpose for which it is to be used is its value for that specific purpose. As Professor Mortimer E. Cooley said approvingly in an article regarding the physical valuation of the railways in Michigan that was made under his supervision: "The true cash value of a thing has been defined as the price upon which a purchaser and a seller mutually agree, and at which a transfer actually takes place." Now, land actually costs more for railway than for other purposes because (1) its acquisition and use for railway purposes involves damage to adjacent property not acquired that must be paid for, and (2) land that it is learned is in the direct path of a coming railway, and will be absolutely required by it, attains a monopoly value. If land that a farmer had just bought for \$100 an acre would have cost a railway \$300 an acre, would it be reasonable to say that \$300 an acre is its "true, or market, value" for farm purposes? And, if not, with what fairness or reason can it be argued, as the commission argues, that \$100 an acre, being the value of land for farm purposes, is the "cost of reproduction" or "true value" of land used for railway purposes, when the railway has paid for it, or would have to pay for it if it were unoccupied, \$300 an acre?

The commission doubtless would answer that if a railway actually has paid \$300 an acre it is entitled to a fair return on that amount of investment, but that it is not fair for the existing roads to earn a return on any such amount, because they got most of their land at a price much less than its present estimated cost of reproduction for railway purposes. But does the commission think it unfair for a farmer, who, perhaps, paid only \$1.25 an acre for his land, to sell it now for \$100 an acre, or to earn a return on its greatly increased value? It probably would answer that the railway, being a public-service corporation, has not the same legal or moral

right as the farmer to earn a return on the increment in the value of its land.

Let us examine this theory. Minnesota's mileage of railways in proportion to its area is small compared with the mileage of the eastern states. In order to fill out its large dimensions with population and commerce its existing lines must build many new branches, and perhaps some entirely new railways will have to be constructed. If the state says that it will let these new branches and new lines earn a return only on the farm or town-lot value of the land that they must buy, and not on the three or four times greater amount that they must pay for it to get it for railway purposes, the new branches and new trunk lines are not apt to be speedily forthcoming. And if it decides to let new lines earn a return on what their land actually costs, it cannot deny to existing lines the opportunity to earn a return on the probable cost of reproduction of their land for railway purposes. For the new branches necessarily will compete with existing branches of old lines. The new trunk line necessarily will compete with the old lines. And, therefore, to hold down the rates on the old lines so that they could not earn a return on the total estimated cost of reproduction of their lands for railway purposes, would necessarily be to hold down the competitive rates of the new lines so that they could not earn a fair return on what their land actually had cost; for shippers at competitive points always will ship by the line that makes the lowest rates. In that case, the new lines would either not earn a fair return on their investment in land, or, in order to earn a fair return, they would have to make up by high rates on business at non-competitive points the losses they suffered on business at competitive points. A railway commission can hardly be imagined encouraging railways to pursue such a policy.

[The view expressed in this article, that the proper basis of valuation of real estate used for railway right-of-way and terminals is what it would cost the railway now to acquire it

for railway purposes, and not its value for farm and other purposes, is the view taken by Master in Chancery Otis in the Minnesota rate case. The Master in his report said:

"The right of eminent domain is given to the company for the purpose of preventing the property owner from taking advantage of the necessity of the company as to any particular tract. While it is intended to secure to him its full and fair value for any purpose for which it is best adapted—and to this end an appeal is given to the courts from unrighteous awards—we are not to lose sight of the fact that railroads must be constructed along continuous lines, and that the topography of the lands through which the lines are projected has much to do with their availability for railway purposes, and that such availability necessarily and properly enhances their value, for which the owner is entitled to compensation, and so it comes about that properties so available and favorably situated for the purpose have a much greater value than other adjoining or adjacent properties not so conditioned."

It has recently been contended that when a valuation is being made for the purpose of rate-regulation, railways should not be credited with the "unearned increment" in their land. It is interesting to note that the Master in the Minnesota rate case emphatically holds that the unearned increment must be taken into consideration, and for authority, quotes the following statement made by the Supreme Court of the United States in the case of *Wilcox v. Consolidated Gas Company* (212 U. S. 19, 41, 52): "There must be a fair return upon the reasonable value of the property at the time it is being used for the public. . . . And we concur with the court below in holding that the value of the property is to be determined as of the time when the inquiry is made regarding the rates. If the property which legally enters into the consideration of the question of rates has increased in value since it was acquired, the company is entitled to the benefit of such increase."

Continuing, the Master says:

"This clearly shows that the company is to share as well as

the public in the general growth and prosperity of the country. . . . The roads under consideration were constructed and completed many years ago, and what may have gone into them, if it could be determined with reasonable certainty, would not take into consideration the changed condition of the country since their original construction, its growth and prosperity—in which the companies are entitled to share—and by reason of changed conditions and lapse of time it has little weight in arriving at present value.”]

The tax board of Michigan, in valuing the roads of that state for taxation, appraised railway land at 100 to 125 per cent in excess of its value for other purposes. The tax board of Wisconsin, in valuing the roads in the state for taxation, appraised railway land at 150 per cent. more than its value for other purposes. Can it be that the difference between the bases of appraisals of land in Michigan and Wisconsin, and in Minnesota, is due to the fact that in the former cases foundations were being laid on which to fix what the railways should pay to the public, while in Minnesota a foundation was being laid on which to fix what the public should pay to the railways? Such variances of opinion between public officials in such circumstances are not calculated to encourage implicit confidence in the impartiality of valuations.

The foregoing reasoning leads to the conclusion that in a fair physical valuation some deduction should be made from the cost of reproduction, new, for depreciation of rails, bridges, equipment, etc.; that, on the other hand, some compensating addition should be made for adaptation and solidification of roadbed; and that land should be appraised on the basis of its estimated present cost of reproduction for *railway purposes*. If this be correct the commission's "Estimate A, Present Value," is based on more nearly correct economic principles than any other of its estimates. Whether it is accurate from an engineering point of view could be determined only by engineers familiar with each of the railways appraised.

[Master in Chancery Otis put even higher valuations on the railways directly involved in the litigation heretofore referred to than the commission's "Estimate A, Cost of Reproduction, New." The following are the commission's "Estimate A, Cost of Reproduction, New," of the Northern Pacific, the Great Northern and the Minneapolis & St. Louis, and the Master's valuations:

	Northern Pacific.	Great Northern.	Minn. & St. L.
Commission's estimate...	\$69,397,955	\$107,074,102	\$16,622,245
Master's valuation.....	90,204,545	138,425,291	21,608,464

While, as already stated, the commission, in order to arrive at the present values of the properties, made reductions from their estimated cost of reproduction, new, on account of depreciation, the Master made his estimates entirely on the basis of cost of reproduction, new. On this subject he said:

"A large part of the depreciation is taken care of by constant repairs, renewals, additions and replacements, a sufficient sum being annually set aside and devoted to those purposes, so that this, with appreciation of roadbed and adaptation to the needs of the country and of the public served, together with working capital hereinafter mentioned, fully offsets all depreciation and renders the physical properties of the roads not less valuable than their cost of reproduction new. . . . There is another element which may properly be considered in connection with the question of depreciation and as an offset to it. It has been necessary that the companies should have on call a large sum of money for the conduct of the business and to meet emergencies. No doubt a large part of it draws a low rate of interest while on deposit in banks, but it must be that very considerable amounts are idle and unproductive and must be considered as an element of value in the matter of rate-making. In view of all the foregoing considerations it follows without question that there should be no deductions on account of depreciation."]

III.

When a fair physical appraisal has been made of what worth will it be, economically or legally, as a basis for fixing rates?

In the course of his argument in his report to show that the cost of reproduction of railway land for railway purposes is not the proper basis of valuation, Mr. Morgan, engineer of the commission, says: "Cost of reproduction and value as a utility have no necessary logical relation." If the cost of reproduction of the physical property for *railway purposes* has no necessary relation to utility, can there be any necessary relation between its cost of reproduction for *farm purposes* and its utility for transportation purposes? Obviously, no. But utility is one of the elements and the most important element, in the value of everything that properly can be regarded as capital. Consequently, it would seem, there is no necessary relation between the cost of reproduction of the physical property of a railway and its value; and an estimate of the cost of reproduction of the physical properties of the railway is not a true valuation of the railway at all.

That the cost of reproduction of the physical plant of a railroad is an element in its value is clear. No one would pay the same for two railways of the same mileage, having the same earnings per mile, if one had a decrepit physical plant and the other had a good one. But, on the other hand, no one would pay the same for two railways that had equal mileage and equally good plants, if one had only half as much earnings per mile as the other.

[Suppose that an inventory of the physical assets of a railroad should show that it would cost \$30,000 per mile to reproduce it and that on no rates it could make could it earn a return on more than \$20,000 per mile. This is by no means a supposition without any basis of fact. For example, a road

may have been built at a cost of \$30,000 per mile into a district affording a large lumber traffic. In course of time, if the cutting of timber progresses rapidly, the amount of available traffic from this source will begin to decline, and the more traffic there is for the road each year the less there will be for it in later years unless some other source of traffic is developed. If it turns out that the country is not adapted to the development of any other industry, the time will come when the road will be left without any traffic at all. Then, regardless of its cost of physical reproduction, what will its value be? It will be nothing, because the property can earn nothing. The property of a railroad is not economically different from any other kind of property. The present value of anything depends on the highest practical use to which it can be put. There are lots in the residence districts of Chicago which, with the buildings on them, formerly had a high value because they were situated where people of large means desired to live. These districts have ceased to be fashionable residence districts and the houses on them are now used for boarding houses. The houses and lots together are now worth much less than it would cost to reproduce them, simply because under present conditions the earning capacity of property in these particular districts has declined. A banker loaning money on such property now would not be guided by what it cost nor by what it would cost to reproduce it, but wholly by its value based on the rents which the property will yield—in other words, on its earning capacity. There are publishing concerns which could be sold for millions of dollars, but which have no physical plants whatever. They get their printing, binding, etc., done at outside printing plants and their whole physical equipment consists of office furniture. In what, then, does their value consist? Obviously, it consists only in their earning capacity, and if through bad management their earning capacity were destroyed they would be rendered absolutely valueless. On the other hand, if their physical equipment were destroyed there would be no sub-

stantial reduction at all in their value. A merchant may have a retail business that can be sold for \$100,000. His entire investment in the building he occupies and in his stock of goods may not exceed \$50,000. Why can he sell his business for \$100,000? Because its earning capacity gives it a value of \$50,000 in addition to the value of \$50,000 given to it by the purely physical properties. The same reasoning applies to railways.]

It will be replied, perhaps, that the earnings of a railway cannot be considered in making a valuation of it as a basis for rate-regulation, because earnings depend on rates, and the reasonableness of rates is the very thing to be determined. But earnings do not depend solely, or even mainly, on rates. Gross earnings depend both on rates and on the density and nature of the traffic. Probably no two roads charging the same rates ever had the same gross earnings per mile, because one is almost sure to apply the rates to a greater density of traffic than the other. Net earnings depend as much on operating expenses as on gross earnings. Two roads might have approximately the same mileage, rates, density and nature of traffic, and gross earnings, and yet have very different net earnings, because of differences in operating expenses.

The density of traffic, other things equal, depends on the skill that has been used in locating the property, in co-operating with *entrepreneurs* in building up industries on its lines, in getting good traffic connections, etc.

[A railway does not get up to its full earning capacity for years after its original construction is completed. In fact, it may be said that a railway never does get up to its full earning capacity. Every big railroad has a number of high-priced men who devote all of their energy and talents to campaigning and working to obtain traffic, not merely by attracting it from other roads, but by increasing the agricultural productivity of the land along their lines, discovering and securing the development of new mines, attracting fac-

tories, etc. The difference between the abounding prosperity of one line and the bankrupt condition of a competing road may be altogether due to the fact that the traffic department of the one has been energetically and skilfully managed while the traffic department of the other has not been so managed. A valuation based entirely on the cost of reproducing the properties of the two roads would take no account of this. But would not this be entirely to ignore one of the most important factors in the real value of a railway?]

Similarly, low operating expenses, other things equal, indicate high operating skill. The road with the greater density of traffic, or the lower operating expenses, has more utility for its owners because it earns them more clear money. It has more utility for the public because it hauls more travelers and goods, or handles an equal number and amount at a lower cost. Can there be any question, then, that it is a more valuable property both to the public and to its owners than its competitor with an equally good physical plant but a smaller business and higher operating expenses? And since it actually is more valuable, is it not solemn nonsense to place on it the same "valuation" as on its competitor?

The sum of the costs of reproduction of a watch-case, main-spring, jewels, etc., is the value of a watch as junk, but not its value as a watch. Its value as a watch depends mainly on how it will run. Similarly, the cost of reproduction of the locomotives, culverts, fish-plates, etc., of a railway is not its value as a railway. Its value as a railway depends on whether it is so located and so organized and operated as to be of great or small utility to the public, of great or small profit to its owners. Rate-regulation based on physical valuation alone would put a premium on extravagant construction and operation and a discount on skilful management.

It is believed that valuation of railways based solely on the cost of the physical properties is as unsound legally as it is economically. In the case of *Reagan v. Farmers' Loan & Trust Co.*, 154 U. S., 362, 412, the Supreme Court of the

United States held that a railway was not necessarily entitled to earn a return on its cost of construction, saying:

"It is unnecessary to decide, and we do not wish to be understood as laying down as an absolute rule, that in every case a failure to produce some profit to those who have invested their money in the building of a road is conclusive that the tariff is unjust and unreasonable. . . . The construction may have been at a time when material and labor were at the highest price, so that the actual cost far exceeds the present value; the road may have been unwisely built, in localities where there is not sufficient business to sustain a road."

In such event the road will not be upheld in charging excessive rates even to pay a return on its actual cost. If the "present value" of the property be less than its "actual cost" the owners must take the consequences. This would seem to imply rather plainly that the court regarded the value of a property as something entirely different from its cost, and that a road is legally entitled to earn a return on its value, whether that be less or greater than its cost.

In *Smyth v. Ames*, 169 U. S., 466, the Supreme Court mentioned the cost of original construction and permanent improvements, the cost of reproduction, the amount and market value of stocks and bonds outstanding, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, as factors to be considered. It added: "We do not say that there may not be other matters to be regarded in estimating the value of the property."

[It will be noted that in this case the court referred to the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses. Now, the only measures of the probable earning capacity of the property under particular rates are the nature and the density of the traffic. It follows that these things must be considered in making a valuation. As to operating expenses, which the court also mentioned as a factor

to be considered, what have they to do with the estimated cost of reproducing the physical plant? Obviously, the only bearing they have on the value of the railway is that the higher they are, other things equal, the less net earnings will be; and that the lower they are, other things equal, the more net earnings will be. In other words, they affect the value of the property by affecting its capacity to earn profits.]

The advocates of physical valuation seldom go back farther in the decisions of the Supreme Court than *Smyth v. Ames*. But four years before in the case of *C., C. & St. L. Railway v. Backus*, 154 U. S. 439, 445, 446, it used the following language:

"But the value of property results from the use to which it is put and varies with the profitableness of that use, present and prospective, actual and anticipated. There is no pecuniary value outside of that which results from such use. . . . Will it be said that the taxation must be based simply on the cost, when never was it held that the cost of a thing is the test of its value? Suppose there be two bridges over the Ohio, the cost of the construction of each being the same, one between Cincinnati and Newport, and another 20 miles below and where there is nothing but a small village on either shore. The value of the one will, manifestly, be greater than that of the other, and that excess of value will spring solely from the larger use of the one than of the other."

The meaning of the last sentence is not changed by substituting for the phrase, "the larger use" the phrase, "the greater density of traffic." The *Backus* case was a tax case; but it is too obvious for dispute that what the court said here about value applies equally to appraisals for taxation and for rate-regulation.

[In the very recent case of the *Missouri, Kansas & Texas Railway Company v. Love, et al.* (177 Fed. 493, 496, 497), Judge W. C. Hook of the United States Circuit Court, third division, used language indicating that he believes that not merely the cost of reproducing the physical property of a rail-

way, but its ability to earn profits and to serve the public, must be taken into consideration in making a valuation of it. Said Judge Hook:

"An established railway system may be worth more than its original cost and more than the mere cost of its physical reproduction. It has passed the initial period of little or no return to its owners which, of greater or less duration, almost always follows construction and is not infrequently marked by default and bankruptcy. The inevitable errors in its building which finite minds and hands cannot avoid have been measurably corrected, time and effort have produced a commercial adjustment between it and the country it was intended to serve, relations have been established with patrons, and sources of traffic have been opened up and made tributary. In other words, the railway, unlike one newly constructed, is fully equipped and is doing business as a going concern. It has attained a position after many experiences common to railway enterprises which entail loss and cost not paid from current earnings, and which correspondingly make for value."]

We may reasonably conclude, therefore, that not only the cost of reproduction of the physical property for railway purposes, but also its strategic location and the ability with which it is managed as indicated by the great or small density of its traffic and its relatively large or small operating expenses, must be given due weight in fixing its valuation for rate-regulation, and that any valuation for rate-regulation that does not give due weight to these and any other factors that enter into its utility as an instrumentality of transportation will not secure the approval of the Supreme Court of the United States. It will not be easy to work out a formula for valuation that will give due weight to such factors; but the difficulty of making a valuation that shall be legal and fair is not a sufficient reason for not trying to make fair and legal any valuation that may be undertaken.

The view taken by the very able Railroad Commission of

Wisconsin in deciding the passenger-rate cases in 1907 seems, in the main, to coincide with the opinions expressed in this paper. The state tax commission had made a physical valuation of railways based on cost of reproduction. In this valuation land used for railway purposes was appraised at two and one-half times the value of the adjacent land. In deciding the case of *Buell v. C., M. & St. P. Railway* the commission accepted as correct the tax commission's physical valuation of the St. Paul road. This valuation, based on cost of reproduction, new, was \$62,970,177; less depreciation, \$50,832,356. The commission said that to take the latter figure as a basis for rate-regulation "leaves out of account the value of the plant as a going concern, the business it has built up, the connections it has made." And after quoting from the decision of the United States Supreme Court in *Smyth vs. Ames*, the commission continued:

"We have carefully considered this matter of valuation and the various elements that should be taken into account as decided by the court. Our conclusion is so near to the cost of reproduction, new (\$62,970,000), that we have concluded to adopt that valuation; not because it happens to be made on any particular basis, but because it is equivalent to a composite value arrived at after taking into account the various elements suggested by the court."

If the Minnesota commission should follow the example of the Wisconsin commission it would take its very highest estimate—"Estimate A, Cost of Reproduction, New," amounting to an aggregate of \$411,735,195, or \$54,204 per mile—as the correct basis for regulation of rates.¹

¹ As already noted, Master in Chancery Otis adopted an even higher valuation than the commission's "Estimate A, Cost of Reproduction, New."

IV.

Under the present system of railway-regulation in the United States part of the valuation of any railway must be allocated to state and part to interstate business before it can be used as a basis for fixing rates. For, while the same terminals, roadway, locomotives, and cars are used for hauling both state and interstate traffic, the rates on state traffic are regulated by state authorities; those on interstate traffic, by federal authorities. The basis on which this division of valuation should be made seems almost insoluble. The Wisconsin commission appears in the passenger-rate cases to have made the division on the basis of gross earnings. The members of the Railroad Commission of Washington agreed on the valuation recently placed on the railways in that state, but they disagreed entirely on how the valuation should be divided. Chairman Fairchild contends that the division should be based on net earnings. On that basis 65 per cent. of the valuation of the Great Northern in the state should be allocated to state and 35 per cent. to interstate business, and its state rates should be slightly reduced and its interstate rates left unchanged. Commissioners Lawrence and Jones favor allocating the valuation on the basis of the cost of operation, in which case 45 per cent. of the valuation of the Great Northern should be allocated to state and 55 per cent to interstate business, and its state rates should be radically lowered and its interstate rates substantially raised. Now, since such a wide divergence of opinion has developed between the members of a single state commission, are there not apt to develop even wider differences of opinion between the state and the interstate commissions? In that case we might be treated to the spectacle of a state commission regulating the state rates of a road on 45 per cent. of its valuation, and the interstate commission regulating its interstate rates on 35 per cent. of its

valuation, in which event it would earn nothing on the remaining 20 per cent. of its valuation. The federal courts would then have to arbitrate between the warring commissions.

Probably the only way fairly and rationally to settle this question, if valuation is to be used at all as a basis for rate-regulation, would be to have a single valuation made and all rates, state and interstate, regulated by a federal commission. This, no doubt, would require an amendment of the Federal Constitution, the obstacles in the way of which are familiar.

[Master in Chancery Otis held that the railways of Minnesota could not apply the rates fixed by the legislature and railway commission of Minnesota without either correspondingly reducing their interstate rates or unfairly discriminating against interstate commerce. He therefore held that the rates were in violation of the Federal Constitution, not only because they were confiscatory in that they would not yield the railways 7 per cent. on a fair valuation, but also because they interfered with interstate commerce. If his findings shall be upheld by the courts, it may be that no amendment to the Constitution will be necessary in order to give the federal government virtually exclusive jurisdiction over the regulation of rates.]

A valuation based solely on cost of physical reproduction probably would result in such a road as the Denver & Rio Grande, with its difficult mountainous construction and comparatively small earnings, being appraised per mile as high as, or higher than, a road such as the Union Pacific, with its relatively easy construction and large gross and net earnings. An appraisal that gave due weight to the Union Pacific's greater density of traffic and lower operating expenses would result in a much higher valuation being placed on it. Even then, perhaps, it would be found that the Union Pacific's earnings were larger in proportion to its valuation than the rate-regulating authority considered fair. But if its rates were, consequently, reduced to what was deemed fair all the com-

petitive rates of the Denver & Rio Grande would also have to be reduced, with the result that its earnings would be made less than anybody would consider fair. Conditions such as these would be met all over the country. Would the regulating authority then fix rates so that the weak lines could earn a fair return—6 per cent., say—and the strong lines more? Or would it fix rates so that the strong roads could earn only 6 per cent. and the weak lines little or nothing?

[This question was presented in a very practical way in the Minnesota rate case. The three roads directly involved were the Great Northern and the Northern Pacific, which are very strong roads, and the Minneapolis & St. Louis, which is a weak line. The Master in Chancery said:

“Abandonment of either of these roads would be a great public calamity, and if we can conceive of them being suddenly obliterated, their immediate reconstruction would follow in response to public necessity, which shows that they must be worth what it would cost to reproduce them and that a return based on such cost would not be oppressive. The Minneapolis & St. Louis along its entire line comes into sharp competition with strong intersecting lines and while, as before stated, it subserves a useful purpose and operates in response to public demand, it can be maintained only by the exercise of the highest economy and watchfulness in its operation, and to succeed it must be given greater latitude than is necessary with respect to the more favorably located and prosperous lines of railway. Necessarily, to get business, its rates must conform to those existing on the other roads where competition is an element, but where this does not exist it is entitled to rates not so controlled by competition and with reasonable limits must, to exist, be given a free hand in the conduct of its business.”]

No matter how a valuation was made, obviously it would be almost worthless in determining how much any specific rate, as on stone or dry goods, ought to be. The detailed classifications and schedules of rates would have to be made

as now; for if it were attempted to make the rate on each commodity pay all the direct and indirect expenses of hauling that commodity and its pro-rata share of the entire return on the valuation, the movement of the higher classes of commodities would not be facilitated or increased, but the movement for any considerable distance of all the cheaper and bulkier commodities—grain, coal, lumber, iron ore, etc.—quickly would be stopped.

[The popular idea seems to be that rates are so adjusted as to earn a return on the capitalization of the railway; that many railways are over-capitalized and charge excessive rates in order to earn a return on their excessive capitalization, and that valuation should be substituted for capitalization as the basis of rate-making. The great trouble with this theory is that it is entirely false. Most traffic managers do not know the capitalization of their railways and would pay no attention to it in fixing rates if they did. The principle of diminishing costs is exemplified to such marked degree in railway operation that it is exceedingly difficult to determine how remunerative is any specific rate or whether it is remunerative at all. Fixed charges, including interest on bonds, taxes and rentals of terminals, equipment, tracks, etc., go on whether the amount of traffic handled be increased or not. Whatever business can be got which will *add more to earnings than the handling of it adds to expenses* is worth having, no matter how low is the rate that must be made to get it. Now, obviously, the amount of the capitalization or valuation of a road has absolutely nothing to do with the question whether particular traffic will add more to the gross earnings of a railway than it will add to its gross expenses. Of course, it is conceivable that if all railways were over-capitalized, and the traffic could bear considerably higher rates, rates as a whole might be advanced with a view to paying a return on the total capitalization. But the number of roads that are over-capitalized is relatively small, and over-capitalization of these roads actually tends to keep rates down rather than to cause

them to be raised. An over-capitalized road is always extremely anxious to increase its earnings. It would lose business by raising its rates when other roads did not raise them. On the other hand, by cutting rates it may get business from other roads that it could not otherwise get, and often this actually happens. For example, seven years ago the Chicago Great Western, which is well known to be over-capitalized, reduced the proportional rate on dressed meats from Missouri river to Chicago from $23\frac{1}{2}$ cents to $18\frac{1}{2}$ cents per 100 pounds in consideration of a contract by the large meat packers to give it a bigger share of their traffic. When this contract expired last spring an attempt to get the rate advanced was made. The roads generally favored an advance except the Chicago & Alton, which is regarded by the public as one of the classic examples of an over-capitalized road. As the Alton did not advance the rate another road refrained from advancing it. This was the Wabash, which also is an over-capitalized road. The reason why the Wabash did not raise the rate was that it could not afford to lose any business which might yield it some profit, however little. If the popular theory that over-capitalization causes railways to raise rates were correct, these roads would have been the leaders in advancing this rate, whereas one of them reduced the rate in opposition to the wishes of all of its competitors, and the other two kept the reduced rate in effect after all competing lines raised it. The very remote relation between capitalization and rates emerges only when railways resist a general reduction or seek a general advance in rates on the ground that such reduction will make it impossible, or such advance is necessary to enable them, if they maintain satisfactory service, to pay satisfactory returns on reasonable capitalizations.]

The only way that a valuation of railways, even if made in the fairest and wisest possible way, could be used for any just and practical purpose, would be as a guide in determin-

ing whether or not the various railways are earning more or less than a fair return.

[Even if it were found that some roads were earning more than a fair return, valuation would give no clue to what rates should be reduced. It might be that a shipper would come in and complain that his rate was too high and ought to be reduced because the road was earning an excessive return and that investigation would show that in proportion to other rates his rate was already extremely low, and that the road's large return was being derived from other rates. On the other hand, valuation might show that some roads were not earning a fair return. Upon the theory of those who advocate valuation, the rates ought in that case to be raised. But it might be that its rates were already high and that an advance in them would cause destruction of traffic which would actually reduce its net earnings. In that event on this theory, the *advance* in the rates would have made them *more unreasonably* low than they were before. Of two roads handling the same kind of traffic between the same points on the same rates, one may have very large net earnings and the other very small or none. If we are to use the total return as the test of reasonableness of rates, shall we say in such cases that the rates are unreasonably high or unreasonably low? After the valuation was made the various rates and schedules of rates would have to be made as they are now; that is, *in proportion to what the various kinds of traffic will bear*. A great many persons who advocate valuation of railways as a basis for rate-making do so because it has served pretty well as a basis for adjusting the charges of other public utilities. But a railway differs from other public utilities in several important particulars. In the first place, a public utility such as a street railway handles only one kind of business, whereas a railway handles a great many different kinds of traffic which cannot bear the same rates. In consequence, while the adjustment of the rates of a street railway or a waterworks is a comparatively simple matter, the adjustment of the rates of a steam

railway, which apply not only to passengers, but to 8,000 or 10,000 different commodities, is a very complex matter. Again, a public utility such as a street railway or a waterworks has a monopoly of its business, while in every territory there are numerous railways which cost different amounts, whose valuations would be different and which operate under different conditions, but which must make the same rates on competitive business. Again, the business of such a public utility as a street railway or a waterworks company does not fluctuate much from year to year, while that of a steam railway fluctuates greatly. In the calendar year 1908, following the panic in 1907, the gross earnings of the railways of the United States declined \$300,000,000, while the earnings of the street railways actually increased. The recent decision of the Supreme Court of the United States in the Consolidated Gas Company case has been frequently cited as a precedent establishing the right of the public to limit the profits of railways to 6 per cent. But in its decision in this case the court plainly indicated that it held that it was reasonable to restrict the Consolidated Gas Company to 6 per cent. because the investment in it involved so little risk. The court said:

"In an investment in a gas company, such as complainant's, the risk is reduced almost to a minimum. . . . The court below regarded it as the most favorably situated gas business in America. . . . Under the circumstances, the court held that a rate which would permit a return of 6 per cent. would be enough to avoid the charge of confiscation, and for the reason that a return of such an amount was the return ordinarily sought and obtained on investments of that degree of safety in the city of New York. Taking all facts into consideration, we concur with the court below on this question, and think complainant is entitled to 6 per cent. on the fair value of its property devoted to the public use." (212 U. S. 19, 49, 50.)]

Any valuation for the purpose of rate regulation should be made by the federal government, so that each road would be appraised as a whole. Is it worth while to spend a large sum

of money to make one wholesale valuation for this purpose? If this question had been asked two years ago most shippers and railway commissioners would have answered in the affirmative and most railway officers would have answered in the negative. Since then a good many railway officers have modified their opinions or entirely changed them. The popular view is that the railways as a whole are greatly over-capitalized and that they are charging excessive rates to pay dividends on watered stock; and this view is constantly causing enforced reductions in passenger and freight rates. On the other hand, railway managers, while conceding that some roads are over-capitalized, express confidence that a fair appraisal of all the railways, based even on cost of reproduction alone, would far exceed their aggregate net capitalization—arrived at by eliminating duplications due to intercorporate ownership of securities—and that a fair appraisal based on all the factors that ought properly to be considered would, for all the railways, far exceed their present gross capitalization, and demonstrate that railway earnings and dividends are not excessive, but quite the contrary. The Minnesota and other valuations lend support to this view.

[The popular notion of the present attitude of railway heads toward valuation is erroneous. It is assumed that they oppose a valuation for fear that it would show that the roads are over-capitalized and are earning too much. The numerous railway presidents with whom I have talked have been unanimous in saying that even a valuation based merely on the estimated cost of reproducing the physical properties would greatly exceed not only the net, but the gross capitalization of the railways as a whole. It is probable that even a commission unfairly disposed would find it impossible, if it really took into consideration all the assets of the roads, to make a valuation that would be less than the gross capitalization. This opinion is based upon actual results of the valuations that have been made in Wisconsin, Michigan, Minnesota and Washington. In Washington the commission placed on two

of the three large roads in the state valuations exceeding their capitalizations per mile. The exception was the Oregon Railroad and Navigation Company. The Commission put on it a valuation of \$19,500,000, which is substantially less than its capitalization. The tax commission has since put on it a valuation for taxation of \$27,500,000, which is substantially in excess of its capitalization. The only state where a valuation has been made which is greatly less than the capitalization of the roads is in Texas. Perhaps this fact requires no comment, since the policy of Texas toward corporate property of all kinds is pretty well known. It is significant, however, that while the railroad commission's valuation is only \$212,794,586, and the capitalization of the Texas roads is \$427,988,103, the state tax board values the properties for taxation at \$411,594,825.¹

It may safely be said that railway officers now oppose valuation, not because they think it would show that the roads as a whole are over-capitalized, but because they think a valuation based merely on the estimated cost of reproducing the physical properties would be an economic absurdity, and that an attempt to fix rates on it would be saved from being absurd only because it would be so destructive of the best interests of the roads and of the public.

The economist cannot look at this subject from exactly the same point of view as the railway officer. His duty is to consider how a fair valuation can be arrived at, whether it would be an important guide in fixing rates or would merely

¹ "In the recent hearing before the Interstate Commerce Commission, Mr. R. A. Thompson, who for many years had been the chief engineer to the Texas Railroad Commission, testified that it was his deliberate opinion that the *physical* property of the railways of Texas was worth on an average \$30,000 per mile of line. That is, he believes that the railways cannot be replaced at the current prices of land, labor and materials for less than \$30,000 per mile, an amount approximately equal to the total outstanding stocks and bonds."—Potts, "Railroad Transportation in Texas," page 194. The Railroad Commission's valuation is but \$17,015 a mile.

satisfy public curiosity, what its costs would be, and whether the expenditure would probably be warranted by the advantages derived by the public. When the Supreme Court, in the case of *Smyth v. Ames*, said that a railway was entitled to a fair return on the fair value of its property, it did not say that this is *all* which it legally may be allowed to have or which it ought to be allowed to have in the interest of the public welfare. It simply said that this is the least to which a railway can be restricted without confiscating its property contrary to the constitution. If it is the intention of the public to allow and compel the railway to charge rates which are reasonably proportioned to the value of the service it renders, and when it does so to allow it to earn a return as large in proportion as those earned in other businesses, due allowance being made for difference of hazard involved, a valuation would serve no purpose that would justify the expenditure of the millions of dollars that would have to be laid out to make it. On the other hand, if it is the intention of the public to try to restrict the railway to the very least to which a railway can be restricted without confiscation—in other words, to allow railways to have only the very least of which they cannot constitutionally be deprived—then valuation might serve some useful purpose. It would mark the limit where confiscation would begin.]

A general valuation would set a limit below which reductions of rates and earnings by public authority could not go. If it showed that any road, or all the roads, *earn* no more than a fair return, it would be notice that for every future reduction in rates there must be a compensating advance. If it showed that any road, or all the roads, *earn* less than a fair return, it would practically authorize an increase in rates. Therefore, while many persons are advocating valuation of railways as a means of getting reductions of rates, not a few railway managers of prominence are disposed to regard the project as a possible effective means of preventing further reductions, or even securing advances.

SHALL RAILWAY PROFITS BE LIMITED?¹

Unless all signs fail, the phase of the "railway problem" which will occupy the largest place in the public mind and in public discussion for some years is the question whether railway profits shall be limited; and if so, how and to what extent. Both the Interstate Commerce act and various state laws prohibit railway rates which are "unduly discriminatory" or "unjust and unreasonable," the latter phrase meaning as here used, excessive—exorbitant. Everyone agrees that these are salutary provisions. It is commonly assumed that large profits result from high rates. It is therefore concluded by many that to keep rates from being exorbitant railway profits must and should be restricted.

This theory has been voiced in many quarters. Mr. Geo. A. Rankin, in a recent book,² advocates concentrating the control of all the railways of the United States in one holding corporation limited to a net return of 5 per cent. In many proceedings before railway commissions and courts the same doctrine that the public may and therefore ought to restrict each railway to a "fair return" is being urged by those who favor reductions of rates by action of public authorities or who oppose advances in rates sought by the railways. Efforts are being made to secure the passing of legislation which will establish the principle of limitation of profits and provide special machinery for carrying it out. The plan to have the Interstate Commerce Commission make a valuation of all the railways, which plan was approved by the House of Representatives at the last session of Congress but rejected by

¹ Reprinted, by permission, from the *Journal of Political Economy*, October, 1910.

² *An American Railway Transportation System: A Criticism of the Past and Present and a Plan for the Future.*

the Senate, is advocated on the ground that the roads should be restricted to a "fair return," and that what is a "fair return" cannot be known without ascertaining the value of their properties. Typical of many bills introduced in the last Congress was that of Representative William R. Smith of Texas. This bill would have required the Commission to fix all interstate rates so that they would "yield only a reasonably involved in fixing fair and reasonable rates, no one, perhaps, would question the constitutionality or expediency of net return on a fair value of the carrier's property as determined by the commission."

If it were indisputable that limitation of profits is necessary the proposed policy. But railway counsel and managers, and some competent students of railway affairs, contend that limitation of profits is not necessarily involved in just and effective regulation of rates, but is a different and even antagonistic policy. The cornerstone of the theory that limitation of profits is essential to effective regulation of rates is the assumption that there is a fixed causal relation between rates and profits owing to which they rise and fall together. Now, this is not true. It is true that a railway with high rates may earn large profits, and that a railway with low rates may earn small profits. But it is also true that a railway with low rates may earn large profits, and that one with high rates may earn small profits. The average rate per ton per mile of the Central of Georgia in 1909 was almost 11 mills and its net earnings per mile were \$1,500, while the average rate per ton per mile of the Lake Shore & Michigan Southern was only a little over 5 mills, and its net earnings per mile were \$9,350. It is true that raising rates may increase profits and that a reduction of rates may reduce profits. But raising rates may reduce profits and a reduction of rates may cause, or at least be accompanied by, an increase of profits. Which result will follow always depends on the effect upon the volume of the traffic. The average rate per ton per mile in the United States declined from 9.41 mills in 1890 to 7.59 mills in 1907,

or 19 per cent; and meantime the average net earnings of the railways of the country increased from \$2,300 to \$3,696 per mile, or 61 per cent.

The profits of a railway are affected by many factors of which the amount of the rate is but one. Profits are the difference between gross earnings and expenses. Gross earnings depend on the nature and density of the traffic as well as on the rates applied to it. Expenses, both in the aggregate and per unit of traffic, depend on how much and what kind of traffic is handled, on what kind of a territory it is hauled through, and on what kind of a management the railway has. Of two roads handling the same kind of traffic, between the same points, on the same rates, one may have very large net earnings and the other only small net earnings or even none. If we are to use profits as the test of the reasonableness of rates, shall we say in such cases that the rates are unreasonably high or unreasonably low? A road might be earning more than a "fair return." Its rates on the theory under consideration would be held unreasonable. By advancing them it might destroy enough traffic to reduce its earnings to a "fair return." Would it thereby make its rates reasonable? A road might be earning exactly a "fair return." By a reduction in its rates, causing a large increase in its traffic, or by improvements in its plant or operating methods, causing reductions in its operating expenses, it might raise its net earnings above a "fair return." Would this *reduction* in its rates, or these improvements in its plant or methods, make the rates of this road unreasonable?

The foregoing considerations show that limiting profits is really quite a distinct thing from requiring reasonable rates. The constitutionality and expediency of legislation to limit profits must, therefore, be decided on other grounds than that of regulation to secure fair and reasonable rates.

Many persons, including most railway commissioners and numerous lawyers, think that it has been settled by decisions of the Supreme Court of the United States that the profits of

railways may constitutionally be limited. Mr. Justice Harlan said in the opinion of the court in the Nebraska Rate Case¹ that "what the [railway] company is entitled to earn is a fair return on the fair value of that which it employs for the public convenience." This is interpreted to mean that a "fair return" is *all* to which a railway is entitled. It is argued that the "fair value" of the property is that for which it could be physically reproduced, and that a "fair return" is the current rate of interest on good securities. It is therefore concluded that a valuation of the properties of railways should be made, and that rates should then be so adjusted from time to time that each road will earn only the current rate of interest on its valuation.

Counsel for the railways and some able constitutional lawyers repudiate this interpretation of Justice Harlan's statement.² Justice Harlan did not say that all the railway company is entitled to demand is a fair return, but that this is the least to which it is entitled. That he did not mean that this is the maximum which it may be entitled to receive is indicated by a statement made four years later by Justice Brewer in rendering the opinion in *Cotting v. Godard*.³

"As to parties engaged in performing a public service, while the power to regulate has been sustained, negatively the [supreme] court has held that the legislature may not prescribe rates which if enforced would amount to a confiscation of property. *But it has not held affirmatively that the legislature may enforce rates which stop only this side of confiscation. . . .*"

¹ *Smyth v. Ames*, 169 U.S. 466, decided in 1897.

² See, for example, an address by Walker D. Hines, chairman of the Executive Committee and general counsel of the Atchison, Topeka & Santa Fé, before the Traffic Club of Pittsburgh, March 18, 1910. Also an address by United States Senator W. J. Bailey of Texas, eminent as a constitutional lawyer, before the New York Bar Association, January 20, 1910.

³ 183 U.S. 79, 91. Italics are the present writer's.

This shows that the court had not up to that time held that railway profits might be limited; and it has not so held since. What, then, would it probably hold if the point were squarely presented to it?

The Interstate Commerce act as amended by the Hepburn and the recent Mann-Elkins acts provides that after the Interstate Commerce Commission shall find a rate unduly discriminatory or unreasonable, it shall "determine and prescribe what will be the just and reasonable rate . . . to be thereafter observed in such case as the *maximum* to be charged." Now, the minimum rate a railway can ever reasonably accept is one which will develop traffic that will add a little more to its earnings than to its expenses. If the traffic developed adds \$100 to expenses and but \$99 to earnings, obviously the rate is lower than the railway can reasonably accept. The maximum rate a railway can ever reasonably charge is one which falls a little short of the value of the service rendered for it. If 100 pounds of a commodity are worth \$1 in A and \$1.25 in B, and the rate per 100 pounds from A to B is 25 cents, the owner will gain nothing by shipping it from A to B. But if the rate be but 20 cents it will cost a little less than the value of the service rendered by transporting the commodity from A to B; and the owner can ship it at a profit. Now, railway counsel argue, in view of these facts it is evident that what the Interstate Commerce act means is that the commission cannot reduce a rate, no matter what profits the railway is making, unless the rate exceeds the maximum reasonable value of the service rendered for the rate—in other words, is extortionate. In support of this view they call attention to the fact that when the Hepburn bill was pending it was proposed to give the Commission authority to fix absolute rates, and that it was also proposed to empower it to fix minimum as well as maximum rates. Both these propositions were rejected, because Congress thought it might be desirable in some cases for the railways to make lower rates than those

fixed by the Commission. But it cannot be assumed that Congress meant to encourage the railways to make any rates unreasonably low. It must follow that it meant that the Commission should fix, not rates which would limit railway profits to a "fair return," but merely rates which would relieve and protect shippers and travelers from unfair discrimination or extortion; and that if the commission, as the law stands, should try to regulate rates with a view—not to making *each and every one of them a reasonable compensation for the service rendered for it*—but for the purpose of *limiting or reducing the profits derived by the railway from its rates as a whole*, the courts would hold that it had undertaken to exercise a power which Congress had not attempted to confer on it by existing law, and that therefore its action was illegal.

But what authority over rates and profits Congress has conferred on the Commission by the Interstate Commerce Act as it stands, is a different question from the question as to what further authority Congress and the state legislatures might in future exercise themselves or delegate to the Commissions. The really interesting and important question is, could legislation, either state or national or both, constitutionally be passed and enforced which should require railway rates to be so regulated as to limit the profits of each or all of the railways to the current rate of interest or any other basis which the lawmakers or the commissions might consider a fair return; or has the railway a right of property to demand and receive a reasonable compensation for each service it renders, which right cannot be taken away or interfered with, practically regardless of how much its profits in the aggregate may be?

Most railway commissions and many lawyers believe such legislation to limit profits would be upheld. For, they reason, the railway is engaged in a public service; it exercises the power of eminent domain; and therefore Congress and the state legislatures, or commissions to

which they delegate the requisite power, may regulate its charges in any way they believe for the public good, so long as they do not contravene those provisions of the fifth and fourteenth amendments to the federal Constitution which prohibit confiscation of property. Many railway lawyers and other persons who have studied the subject reject this view. They believe there are limitations on the power to regulate public service concerns besides those imposed by the fifth and fourteenth amendments. The authority of the states to regulate rates is a police power derived from the common law. The power of Congress to regulate them is derived from the Interstate Commerce clause of the federal Constitution, which, like other parts of the Constitution, must be interpreted in the light of the common law.¹ Now, it never was the common law that the *profits* of one engaged in a public service could be limited. Justice Brewer in *Cotting v. Godard*² defined the rule of the common law to be that the person who engaged in a public service had "a right to charge for each separate service that which was a reasonable compensation therefor." If a shipper thought a carrier had charged him an exorbitant rate he might sue the carrier to recover the excessive portion. The court then determined whether the charge was reasonable, not by computing how much profit the carrier was making from its entire business, but by ascertaining what the particular service was worth by reference to the skill with which the service was rendered, its value to the shipper, what was customarily paid for like services under similar conditions, etc. Justice Brewer in the opinion in *Cotting v. Godard* indicated that the common-law

¹ "The code of constitutional and statutory construction which is gradually formed by the federal courts in the application of the Constitution, and the laws and treaties made in pursuance thereof, has for its basis the common law. . . ."—*Cyclopedia of Law and Procedure*, VIII, 385.

² 183 U.S. 79, decided in 1901, four years after *Smyth v. Ames*.

rule was still in effect, and could not be abrogated by statute. He said:

"Its [the legislature's] prescription of rates is *prima facie* evidence of their reasonableness . . . but it does not follow therefrom that the legislature has power to reduce any reasonable charges because by reason of the volume of business done by the party he is making more profit than others in the same or other business. The question is always, not, What does he make as the aggregate of his profits but, What is the value of the services which he renders to the one seeking and receiving such services. . . . The amount of the aggregate profits may be a factor in considering the question of the reasonableness of the charges, but it is only one factor, and is not that which finally determines the question of reasonableness." 183 U. S. 79, 97.

As the decision in this case turned on other points than the reasonableness *per se* of the rates involved, these remarks of Justice Brewer are regarded as *obiter dicta*; but his statement that legislatures cannot reduce any charge conforming to the common-law standard of reasonableness merely because a concern's profits are large is significant. Of course, if a legislature cannot do this, a commission cannot.

In other cases the Supreme court has indicated that there are limitations on the power of public authorities to regulate railways besides those which prohibit confiscation. In the case of *Monongahela Navigation Company v. U. S.*,¹ which was decided some years before *Cotting v. Godard*, the court said:

"For each separate use of one's property by others, the owner is entitled to a reasonable compensation, and the number and amount of such uses determines the productiveness and the earnings of the property, and therefore, largely its value."

In *Lake Shore & Michigan Southern Railroad Company*

¹ 148 U.S. 312, 328.

v. *Smith*,² speaking of the property right of railways in the management of their affairs, it said:

"What the company may choose voluntarily to do furnishes no criterion for the measurement of the power of a legislature. Persons may voluntarily contract to do what no legislature would have the right to compel them to do."

And in the recent case of *Interstate Commerce Commission v. C. G. W. Ry.*,¹ which arose under the Elkins law, and was decided after the Hepburn act was passed, it said:

"It must be remembered that railways are the private property of their owners; that while, from the public character of the work in which they are engaged, the public has the power to prescribe rules for securing faithful and efficient service and equality between shippers and communities, yet, in no proper sense, is the public a general manager."

Those who think that railway profits cannot be limited construe these statements to mean that public authorities may so regulate railways as to require them to give the public good and adequate service at fair and reasonable rates; but that if they go farther than this, and seek to direct the internal management of the railways and to say what profits they may earn and what dividends they may pay, they encroach on the private side of the carriers and invade prerogatives and rights which the Constitution, so long as the carriers continue to be private property, reserves to their owners and managers.

Many persons will think that if this is the correct view the situation is unfortunate, and that the Constitution should be so amended as specifically to empower and require public authorities to restrict railways to an average return approximating the current rate of interest on either their cash investments or the value of their physical properties. It is contended that as railway corporations are created by, derive all

² 173 U.S. 684, 697.

¹ 209 U.S. 118, 119.

their power from, and in maintaining a public highway, exercise a function of, the state, the public has at least a moral right to limit their profits.

The question of most importance after all, however, is not what the public has a legal or an abstract moral right to do, but what it is to its interest to do. If it is reasonably sure to inure to the good of the public to limit railway earnings as proposed, this limitation ought to be made. The interest of the public is superior to all other considerations. But when we consider all that would be involved in carrying out the policy of limitation of railway profits in the way that is advocated, and when we consider all the effects that this policy would probably produce, it may be doubted whether the majority will regard it as expedient.

Regulation of railways should aim to secure three main objects: (1) safe, good, and adequate transportation; (2) rates which do not unfairly discriminate; and (3) the lowest rates compatible with good service. The criterion of the expediency of any policy is the way in which it is adapted to attaining these ends.

To carry out effectively the proposed policy of regulation through limitation of profits would require extension of regulation to almost every detail of the railway business. The Supreme Court has said that the public is in no proper sense the general manager of the railways. It would have to become their general manager to carry out this policy. The railway commissions would have to be authorized to fix the basis, or valuation, on which a return might be earned, and also the percentage of return to be allowed. Then they would have to exercise absolute control over railway accounting. For each road constantly spends money for maintenance of equipment, track, etc., and also for permanent improvements. Now, maintenance is chargeable to operating expenses, while permanent improvements are chargeable to capital account; new securities entitled to the "fair return" could be issued against them. But as to just where expendi-

tures for maintenance and expenditures for permanent improvements begin expert opinions differ. The railway managements, desiring to build as broad a basis of valuation and capitalization as possible, would be disposed to charge all of the expenditures within this "twilight zone" to permanent improvements; and to prevent them from unreasonably swelling their capitalizations railway commissions would have to be empowered, and would have to exercise firmly and in great detail the power, to determine to what account each item of expenditure should be charged.

Again, profits are the margin between earnings and expenses. The management of a railway, seeing that its profits were about to pass the limit of a "fair return," might prefer to check their growth by unnecessarily increasing its expenses rather than by reducing its rates. To prevent the railways from thus anticipating the government in limiting their profits commissions probably would have to be given authority to say what wages should be paid by them, what prices they should pay for materials—in short, to control their expenditures as thoroughly as their rates.

It is sometimes said that if the dividends railways might pay were limited they would invest their surplus profits in permanent improvements and extensions; and that more adequate and efficient facilities of transportation would result. It is not uncommon now for a road to earn 10, 15, or even 20 per cent. annually, and to pay out in dividends only 6 or 8 per cent., the surplus earnings being spent on extensions and improvements. This, it is said, is clearly more to the interest of the public than for a road to pay out its entire net earnings annually to its security holders; and if all railways were required to pursue a similar policy the public would benefit greatly. But railways do not voluntarily limit the *profits* that they earn. They merely limit the amount of their profits that they pay out in *dividends*. And they do not limit the amount that they pay out in dividends because they think the stockholders ought not to have more, but because

they desire, by investing part of past earnings in the improvement of the plants, to give the public safer and better service, and to maintain or increase the earning capacity of the roads so as to enable them in the long run to pay the stockholders more than they could if improvements were not made out of earnings. Now, under a policy of governmental limitation of profits, not the dividends, but the *net earnings*, of each railway would be restricted to the current rate of interest. Consequently, unless a company refused to pay its stockholders the current rate of interest, it could not have any surplus earnings to invest in improvements; and if its earnings equaled the current rate of interest it would not withhold any of them to invest in improvements, because no doubt the main object of a railway in investing earnings in improvements is to increase its profits; and no increase of profits would be allowed.

The principal purposes of improvements in methods of operation are the same as those of improvements in industrial plants, viz., to give the public better service and to reduce operating expenses, and thereby increase profits. As under the proposed policy no increase in profits exceeding the current rate of interest would be allowed, there apparently would be, after net earnings reached that point, as little incentive for the management to improve its operating methods as to improve its plant. In fact, there would be a deterrent to attempting improvements. At present improvements are undertaken with the hope of increasing profits, but always with the knowledge that their cost may turn out to exceed their worth. Under the proposed policy, if an attempted improvement turned out unprofitably the road would have to bear the loss; while if it turned out well, none of the benefit would go to the railway's stockholders in the form of increased dividends, but all of it would go to shippers and travelers in the form of reduced rates.

So it would seem that the enterprise, initiative, and plans for making improvements in plants and methods in order to

reduce the expenses of operation would have to be supplied by railway commissions, which would have to be given large power and discretion to coerce inert and refractory railway managements along the path of progress. It will be hard for most persons to believe that under this plan the development and improvement of transportation facilities would go on as rapidly and cheaply as in the past. Public commissions, however intelligent and powerful, hardly could get railway managers and owners to make as great improvements as they make voluntarily under the stimulus of the desire and expectation of gain.

Another consequence of this policy would be the necessity of obtaining in the money market in the form of new capital all the financial means for making permanent improvements in our railways. This, if it could be done, would probably result in a rapid increase in railway capitalization. English railways have followed this method in making their permanent improvements, and this is one of the main reasons why they are capitalized for \$314,000 a mile, while the net capitalization of the railways of the United States is but \$59,259 a mile.¹

But could these financial means be secured in the money market? If railway capital were to be both limited to, and *guaranteed*, the current rate of interest, plenty could be obtained. But those who advocate limiting profits repudiate suggestions that the maximum return fixed by the public shall also be guaranteed by the public as a minimum. Can it reasonably be expected that capitalists would invest billions in railways knowing that they would have only a very restricted control over their property, and would not be allowed more than the current rate of interest, and might receive less or even nothing?

Let us now consider what effects the proposed policy would

¹ Twenty-second Annual Report of the Interstate Commerce Commission (for 1909), 56.

have on rates. It would not help to eliminate unfair discriminations. For discrimination consists entirely in the *relation* of rates. A road all of whose rates are low and which is not earning its operating expenses can discriminate just as unlawfully and perniciously as one that is enormously prosperous. Discrimination being entirely a matter of the relation of rates, it can only be corrected by changing their relation. While limitation of profits would not help to remove or prevent discriminations, it is conceivable that it might sometimes have the opposite effect. Suppose a community alleged that a railway which was earning exactly a "fair return" was discriminating against it. The commission could not reduce the rates of the complaining community, because that might reduce the earnings of the railway below a "fair return." It could not raise the rates of the favored community because no existing law gives a commission power to raise a rate. And the road could not raise its rates to the favored community because that might increase its profits above a "fair return." How, then, could the discrimination be corrected?

It is commonly assumed that limitation of profits would tend to make rates low. This is the main reason why it is advocated. The average rate per ton per mile in the United States in 1870 was 18.89 mills. In 1887, when the Interstate Commerce act was passed, it had been reduced to 9.84 mills, or 52 per cent. Between 1887 and 1906, in which latter year the Hepburn act went into effect, it declined from 9.84 mills to 7.48 mills, or 24 per cent. Government regulation had no hand in the great and innumerable reductions prior to 1887 reflected in the decline in the average rate. They were made by the traffic managers of the railways. It had very little hand in the great and innumerable reductions in the period 1887-1906. Practically all were made by the traffic managers. The traffic managers voluntarily made these reductions for two reasons. First, each of them sought, by lowering his rates, to capture business from competitors. Competitive

rate-making has now been greatly reduced—although not wholly eliminated—by railway combinations and consolidations and by legislation requiring the roads to publish all their rates, and to give extended notice of proposed changes. The second reason why the traffic managers reduced rates was that they hoped thereby to develop so much additional traffic that the net returns from it on the lower rates would exceed the net returns from a smaller traffic on the higher rates. Often this hope was disappointed; then, whenever practicable, the old rates were restored. The desire to increase earnings is just as prevalent and strong today as ever; and the traffic managers still manifest it not only by raising the rates on commodities the volume of whose movement they think will not thereby be reduced, but also by reducing them on commodities the volume of whose movement they think will thereby be largely increased. They seek constantly to make that adjustment which will yield the railway the largest permanent return, and they know that in the long run they will get the largest return by making no rates that are lower, and none that are higher, than the traffic easily can bear. The enormous increase of traffic shows that, as a whole, the rates of American railways are not burdensome to commerce, but are admirably adapted to foster its growth.

Now, it is obvious that limitation of profits would deprive the traffic manager of every railway which was earning a "fair return" of all incentive voluntarily to make reductions in rates. At present if the traffic manager has a movement of empty cars in one direction, and a shipper convinces him that by making a certain reduction in rates he can develop traffic that will fill his empty cars and add something more to his road's earnings than to its expenses, he will promptly make the reduction. But under a policy of limiting profits he would not be keen to experiment with reductions in rates, for he would know that if he did not develop as much traffic as he expected to, and a loss of net earnings resulted, it would have to be borne by the railway, while if an increase of

net earnings resulted, it would be wiped out by further reductions of rates by public authorities.

It may be answered that if the traffic managers did not make reductions the regulating authorities would. But it has never yet been demonstrated that the railways, as a whole, are now earning more than a fair return on a fair valuation. Most of those who have studied the subject believe that a fair valuation would show that to reproduce the railways of the country as a whole would cost much more than their present aggregate capitalization.¹ Now, the net earnings of the railways as a whole do not exceed the average current rate of interest on their present aggregate capitalization. The dividends declared in 1909, applied to all the stock outstanding, averaged only 4 per cent. On the theory of a "fair return on a fair valuation" general reductions in rates by the regulating authorities probably could not now be justified. And if the conclusion reached in a previous part of this paper is correct—viz., that this policy would tend to reduce the enterprise of railway management, and thereby to increase expenses of operation—it probably would make it impossible for regulating authorities to require general reductions, and, on the other hand, render it possible for the railways, on the ground that they were not earning a "fair return," legally to make even greater general advances than they are now seeking to justify on the ground of increasing expenses of operation.

It may be replied that while the railways as a whole are not earning excessive profits, there are some that are; and

¹ Their net capitalization in 1909, according to the Interstate Commerce Commission, was \$13,711,867,733. United States Senator A. B. Cummins, of Iowa, is an advocate of limitation of profits, yet in a speech before the Traffic Club of Chicago on February 8, 1910, he said he believed a valuation would show it would cost \$20,000,000,000 to reproduce the physical properties of the railways. He therefore opposes a valuation. He contends that railways are not entitled to the "un-earned increment" in their properties.

that while the policy of limitation of profits might not lead to general reduction of rates, or even prevent general advances, it at least would prevent advances and justify reductions on those roads which are earning more than a "fair return." Hitherto in this paper I have treated the railways of this country as if they were a single system. The fact that they are not, far from making the carrying out of the policy of limitation of profits through regulation of rates more feasible and expedient, makes it much less so. For railways vary as widely in their abilities and characteristics as the men who manage them. In every section there are some whose traffic is relatively heavy, whose operating expenses are relatively small, and whose net earnings per mile are relatively large. In the same sections there are other roads whose traffic is relatively light, whose operating expenses are relatively large, and whose net earnings are relatively small. Everywhere these two classes of roads compete for business. They must make the same rates or the road which makes the lowest rates will get all of the competitive business; and therefore if the regulating authorities so reduced or held down the rates of the stronger roads as to limit their profits to a "fair return" the weaker roads would be restricted to less than a "fair return." If the rates of the stronger roads, such as the Pennsylvania, the Lake Shore & Michigan Southern, the Burlington, the Chicago & Northwestern, the Louisville & Nashville, and the Union Pacific, should be so held down or lowered as to restrict their net earnings to the current rate of interest, the net earnings of other roads would be reduced much below it, and many would be bankrupted.

The policy of governmental control and limitation of profits through regulation of rates does not seem well adapted to secure any of the main objects of regulation of railways. It appears to be more apt to injure than to benefit the public. The most equitable, effective, and beneficial way to determine and fix reasonable rates is to proceed in much the same way that the courts determined what was a reasonable rate under

the common law. When an individual rate or a schedule of rates is in question, whether that rate or schedule is fair and reasonable cannot be determined merely by reference to how much profit the railway is making in the aggregate. For if the road's profits were small, it might be held that the rate or schedule was reasonable; whereas the fact might be that the particular rate or schedule in question was excessive and that the smallness of the road's profits was due to the excessiveness of this rate or schedule, or to the lowness of its other rates, or to bad management. And if its profits were large it might be held that the particular rate or schedule in question was excessive; whereas the fact might be that that rate or schedule actually was unfairly low and that the road's profits were all derived from other and higher rates. Similarly, if the large profits of a single road were considered, it might be held that its rates were excessive; whereas investigation might disclose that other roads hauling the same kinds and amounts of traffic, under substantially similar conditions, for the same rates, were making small or no profits; which would show that the differences in profits were mainly or entirely due to differences in the skill of the managements. The Interstate Commerce Commission said in one of its opinions in *Central Yellow Pine Association v. Illinois Central Railroad Co., et. al* (10 I. C. C. 505, 539, 540, 538) :

"While the Supreme Court has undertaken to point out 'certain elements' to be considered in determining the reasonableness of an entire system of rates, it has not named any as shedding light upon the reasonableness of a rate on a single commodity like lumber. It is evident that such elements are widely variant in the two cases. Where an entire system of rates is involved, the principal, if not the only question, is, whether the revenue yielded by the rates on all traffic is a fair return on the value of that which is 'employed for the public convenience'—a question, the determination of which, as we have shown, can have only a very remote, if

any practical, bearing on the reasonableness of a rate on a single article of traffic. On the other hand, where the rate on a single article is in issue, the question (which could not arise in the former case), whether the rate is unjustly discriminatory or unduly preferential, may be presented, and the reasonableness of the rate depends upon the value, volume and other characteristics affecting the transportation of the particular commodity to which it is applied."

And again:

"The rate on one article of traffic may be reasonably high and the carrier fail to earn a fair return on the value of the entire property employed for the public convenience because of unreasonably low rates on other traffic, and *vice versa*, the rate on one article of traffic may be unremunerative or unreasonably low and the return to the carrier from its entire business may be fair or reasonably high, the deficiency under the rate on the one article of traffic being made up by the rates on the balance of the traffic."

Some consideration ought and must be given to the profits of railways in determining what rates they should be allowed to charge. Considering any particular territorial group of railways as a whole, or the railways of the entire country as a whole, it seems quite obvious that their earnings must be sufficient to pay reasonable operating expenses, fixed charges and, on the average, as large dividends, in proportion to the risks of investment, as are paid on investments in banks, factories, farms, jobbing houses, etc., or capital will to so large an extent quit seeking investment in railways as to so greatly arrest their development and extension that they will become incapable of satisfactorily handling the growing traffic which the proportionately larger investments in and development of other businesses will cause to be offered to them. But the profits of any particular railway or group of railways are not, and should not be used as, the sole or even the main criterion of whether any particular rates, or even entire schedules of

rates, are reasonable. There should also be considered the nature of the services rendered; their value to the shippers receiving them; how the profits of the railways affected compare with those of other industrial concerns in the same territory; the density and nature of the traffic; how much the traffic can reasonably bear; how much other railways than those involved charge for similar services and earn on similar rates, etc. If, in view of these considerations, the rates seem unreasonably high *per se* they should be reduced; and if they seem unreasonably low *per se* they should be allowed to be advanced. The courts have held that railways cannot charge extortionate rates *per se*, even if they cannot otherwise make any profit, and it would seem that if they do make reasonable rates it is neither equitable nor expedient to reduce their rates merely because their profits are large. It would seem that the most effective way to get low rates would be, not to provide that the reasonableness of a railway's rates should be measured by the amount of its profits, and that the greater its earnings grew the lower it would have to make its rates, but to provide, if some practicable way of carrying out such a plan could be devised, that the reasonableness of the profits should be measured by the reasonableness of the rates, and that the *lower* a road made its rates the *larger* should be the profits that it would be allowed to enjoy.

RAILWAY RATES AND RAILWAY EFFICIENCY.¹

Louis T. Brandeis, attorney for the eastern shippers in the rate advance cases, has relieved the monotony of the hearings, and added much to the gayety of nations but very little to the sum of useful knowledge, by asserting, and undertaking to show how, the railways of the United States can reduce their operating expenses \$365,000,000 a year. Mr. Brandeis' statement and the evidence he has introduced to support it merit serious consideration, because they have been printed broadcast over the country, and, therefore, no doubt, have tended to give to the uninformed the impression that American railways are very inefficiently operated.

The first comment that suggests itself regarding the position taken by Mr. Brandeis is that it involves the abandonment of the theory on which the shippers heretofore have opposed advances in freight rates. Their contention has been that the railways have so greatly increased the efficiency of their plants and operating methods during the past ten years that, in spite of the advances that have taken place in the costs of labor and materials, they do not need higher rates. Obviously, the contention that the railways have greatly increased the efficiency of their plants and operations and do not need an increase in earnings, and the contention that they are inefficiently operated and should get the additional revenue they need by abandoning their inefficient methods, are not quite compatible. The railways of the United States, with the smallest capital expenditure per mile of any railways in the world, have carried freight and passengers at the lowest rates in the world, while paying the highest wages for labor

¹ An editorial in the *Railway Age Gazette*, December 2, 1910.

and the highest prices for materials in the world. This does not indicate inefficient management. The manufacturers of the United States, while paying the highest wages of any manufacturers in the world, have, in the main, charged the highest prices of any manufacturers in the world for their goods. Mr. Brandeis cites the great improvements in methods in manufacturing plants as examples to be imitated by the railways. One of two things is true: either the factories of the United States, whose owners Mr. Brandeis represents, are not as efficiently operated as American railways are operated, or there has been no justification for the manufacturers raising their prices as much as they have in the last ten years, while railway rates have remained practically stationary.²

There were 239,052 miles of railway in the United States on June 30, 1910. Their operating expenses per mile in the fiscal year 1910 were \$7,727, of which \$1,563 was charged to maintenance of way and structures, \$1,746 to maintenance of equipment, \$3,895 to transportation and the rest to general and traffic expenses. The average reduction per mile in operating expenses which would have to be effected to obtain the aggregate economy suggested by Mr. Brandeis would be \$1,527, which could be secured by a reduction of 14 per cent. in the cost of transportation, 30 per cent. in expenditures for maintenance of way and structures, and 30 per cent. in

² The following is from the Bulletin of the Bureau of Labor for March, 1910: "Wholesale prices in March, 1910, were higher than at any time in the preceding 20 years, being 7.5 per cent. higher than in March, 1909; 10.2 per cent. higher than in August, 1908; 21.1 per cent. higher than the average yearly price of 1900; 33.8 per cent. higher than the average price for the ten years 1890 to 1899; and 49.2 per cent. higher than the average yearly price of 1897."

Compare the foregoing with the following regarding railway rates for the same years, except for 1910, the official figure for which is not yet available: The average rate per ton per mile in the year ended June 30, 1909, was 7.63 mills, or 1.19 per cent. higher than in 1908; 4.66 per cent. higher than in 1900; 9 per cent. *lower* than the average rate for the ten years 1890 to 1899; and 4.38 per cent. *lower* than the average rate of 1897.

expenditures for maintenance of equipment. The average operating ratios of the railways of the United States would have to be reduced from about 67 per cent. to 53 per cent. Everyone familiar with railway affairs knows that many great economies have been made within the past decade, and that many more can be effected. Mr. Harrington Emerson, who has been widely quoted as saying that the railways are worse managed than any other industries really said in his testimony before the Interstate Commerce Commission: "I do not think that the management of the railways has deteriorated at all in ability. I think, on the contrary, that it is fully up to if not ahead of the average ability, and probably ahead of what it was some years ago." But everyone who is aware how fast operating expenses have increased in spite of the great improvements in plants and operating methods which have been made knows that talk of effecting any such reductions in operating expenses as Mr. Brandeis and his witnesses outlined is the merest moonshine. The larger economies have been carried out. Only the smaller remain to be made. If, in spite of the larger ones, operating expenses have increased so fast, how can it be expected that they will not continue to increase in spite of the smaller ones?

The greatest obstacle in the way of effecting even the economies that are *possible* is that the railways cannot secure from the shippers, the public and their employees the co-operation which is necessary to render them *practicable*. One of the criticisms made by Mr. Brandeis of railway operation is that cars and engines are not loaded as heavily as they might be, and that the average movement of a freight car is only 25 miles a day. The railway managers have been struggling for years to remedy these conditions, and Mr. Brandeis' clients and other shippers have prevented their correction. The two main things necessary to get cars loaded more heavily is to raise the minimum carload weights and to hold at terminals cars carrying less-than-carload freight until they are fully loaded. The railways in recent years have

made many advances in carload minimums; but the opposition of the shippers has been so strong that carload minimums are lower now, compared with the average capacity of cars, than they were ten years ago. The shippers at Pittsburgh, Chicago, St. Louis and numerous other cities have within recent years successfully solicited the railways to put in operation numerous package cars running to all parts of the United States on regular schedules for the handling of less-than-carload freight. A car which runs on a regular schedule must be started on its journey when the time comes for it to leave whether it has a full load or not. The abolition of package cars would enable the roads to get heavier loading per car. But do the shippers want them to effect economy in this way, or would they rather pay a somewhat higher rate for the better service?

The only way that engines could in all cases be loaded to their maximum capacity would be to hold cars at terminals until the maximum trainload each engine could pull had been accumulated. That would result in increased economy in railway operation. But would the shippers submit to economy being secured in that way? There is constant complaint from shippers that traffic does not move expeditiously enough now. Mr. Brandeis himself criticises because the average movement of a freight car is but 25 miles a day. But how could the railways detain cars until they got the maximum tonnage rating of each engine, and at the same time increase the average movement per car per day?

The statement that freight cars move an average of only 25 miles a day is true, but, as made by Mr. Brandeis, utterly misleading. The average speed of freight cars *when in motion* is not 25 miles a day, but about 10 miles an hour. The only way to form a correct opinion as to how efficiently freight cars are handled on the average by the railways is to consider in detail the average car's movement from the time it is started to be loaded until it has completed its trip and been unloaded. The average time required for the loaded

and empty car movement involved in the average haul of freight in the United States is about 12 days, and the average distance the car moves about 330 miles. Two days' free time is usually allowed for loading and also for unloading (not including Sundays and holidays, for which additional free time is allowed), and the statistics of the demurrage bureaus show that the delays of the car at terminals by the shippers and consignees for loading and unloading average about $4\frac{1}{2}$ days for each movement. This leaves an average of $7\frac{1}{2}$ days during which the car actually is in the possession of the railway and gives an average movement of about 44 miles per day. This time during which the car is in the possession of the railway includes all legitimate detention of it, such as for switching in and out at both terminals, for switching for classification in yards en route, for rigid inspection and frequent shoppings, and for transfer of lading by reason of enforcement of the stringent safety appliance regulations now in effect. It includes the period during which cars are held for reconsignment to accommodate shippers, and also the periods during which cars are in shops; and, on the average, about 5 per cent. of the total number of cars are in the shops at any given time. It also includes the movement not merely of loaded cars, but also of empty cars; and, of course, the average movement of empty cars is much less than of loaded cars, because the empty car stands on the sidings for much longer periods, which periods of *idleness* are included in the *average movement*. The effect of a heavy reduction in traffic and a consequent proportionate increase in the number of empty cars on the average movement of all freight cars was strikingly shown just after the panic of 1907. In October, 1907, when traffic was very heavy, the average movement of all the cars in the United States was 24.8 miles per day. In April, 1908, there were substantially 700,000 idle cars, including those in shops; and in that month the average movement per day was but 19.6 miles, or 20 per cent. less than it was in October, 1907. Now, there are four months in

every year when practically all the freight cars in the country are busy, and eight months when a large part of them are not in service, and, of course, the great number of cars *idle* during these eight months pulls down the figure showing the *average movement*.

When all these conditions are taken into consideration it does not seem at all surprising that the average movement of a freight car is but 25 miles a day. It also appears perfectly evident that those who are best situated to increase this average movement are the shippers, who have actual possession of the car for loading and unloading more than one-third of the time, who have practical possession of it for a considerable time for reconsignment, and whose failure to provide a more uniform traffic throughout the year makes it necessary for eight months of the year to have thousands of cars standing idle on side tracks.

The question of car efficiency is more than a matter of mere movement. Probably the best combination unit of car performance is that of ton-miles per car per day, which was invented by the committee on car efficiency of the American Railway Association. The statistics of the association show that this item is increasing. The average number of tons hauled one mile per car per day in April, 1907, was 348, and in November, 1909, the record figure of 413 ton-miles per car per day was made, an increase of over 18 per cent. This increase was secured by better car loading and a reduction of empty mileage. The increase in efficiency would have been much greater if the efforts to secure it had met less opposition from the shippers.

One of the main obstacles to increasing car and locomotive efficiency is the congested condition of yards and terminals. And this condition, it would seem, can be remedied only by the expenditure of large sums of money, which must either be derived from earnings or obtained by the sale of securities to the payment of the interest and dividends on which earnings must be applied.

Experience in the shops of many private concerns and of not a few railways has proved that very substantial economies might be effected in railway shops as a whole in the United States. But the difficulties in the way of introducing efficiency methods in railway shops are much greater than in other shops. If the manufacturer wishes to adopt efficiency methods and his employees object, he can lock them out or shut down his plant until they come to terms. But the railway, being a public service corporation, cannot close its shops whenever it pleases and keep them closed as long as it likes. That would mean that its transportation service would rapidly become impaired, and in course of time would cease altogether; and this the law and public opinion will not tolerate. Labor unions usually oppose efficiency methods, because such methods are based on the theory that each man should be paid in proportion to the quality and quantity of the work he does and tend to stimulate each employee to do a greater amount of work than he otherwise would do, which results in the employment of fewer men than otherwise would be employed. Nowhere has the introduction of efficiency methods been, or is it now, more stubbornly opposed by labor unions than it is in railway shops; and it is the deliberate judgment of practically all persons competent to form an opinion that before more efficient methods could be introduced in all railway shops it would be necessary to go through the worst railway strike that ever took place in this country. The only reason why the railways do not try forcibly to adopt more efficient methods and take the risk of provoking strikes is that they fear that a misguided public sentiment would side with the labor unions instead of with the roads.¹

¹ Mr. Brandeis has made the error of treating the business of railway transportation as if it were a manufacturing industry. But running a railway is not like manufacturing; it is more like keeping house.

For example, one of the largest items in the operating expenses on every great railway line is the salaries of its station agents. Suppose one of Mr. Brandeis' efficiency experts should go to a country railway station and study the movements of the station agent throughout the 24 hours of the day. Suppose he could show him how to sell tickets

It is not only in shops that railway employees are comparatively inefficient, and demand, and often get, two days' pay for one day's work. One of the reasons why the locomotive engine-men employed on the railways west of Chicago are threatening to strike is that the railway managers have refused to pay substantially twice as high wages to engineers running Mallet engines as to those running other freight engines. The Mallets have been introduced to effect economies and increase efficiency. Their purpose would be nullified if the wages paid to employees on trains where they are used were based on what the engines do instead of on what the men do. Making speeches or introducing evidence before the Interstate Commerce Commission will never make it practicable for railways to get a dollar's work for every dollar that they

with one hand, while he made out freight way bills with the other. We doubt very much whether the agent would be any happier or better contented with his job after he had been thoroughly "efficientized"; and as the railway must have a whole man at each station, and cannot get its business done with 5/16ths or 27/32ds or any other fraction of a man, there is no place that we can see where any saving would result in the railway pay-roll.

The case of the station agent at a country station is not exceptional but typical of railway service. Take another very large class of railway servants—the engineers and firemen on locomotives. These men are already performing feats of efficiency engineering by doing several things simultaneously, such as watching for signals, attending to injectors and graduating the throttle. There is no chance for Mr. Brandeis's efficiency experts to save anything in engine-runners or firemen's wages; and, as for teaching the one how to handle his machine more economically, and the other how to fire coal so as to save fuel and prevent smoke, the railways already have, and have had for many years, Traveling Engineers at work engaged upon this very task. . . .

It is not a *new* idea, either, that the railways might operate their repair shops more economically. As a matter of fact, many railway officers have for years been working on the problem of introducing in their repair shops the piece-work system, the premium system and other advanced methods of paying for labor on the basis of its efficiency. Many such experiments have shown good results; others have succeeded in strangling the business with red tape, and the resulting saving has appeared on the wrong side of the ledger.

We agree with Mr. Brandeis that the end of economies in railway operations has not been reached, as has been pointed out in these columns at various times, nor is it likely to be. The great difficulty with railway operations at present is that the men in charge are so overburdened with routine matters that they have as a rule no time or energy to spare for the study of new means and methods of saving over those which have been long in use.—From editorial in *Engineering News*, December 1, 1910.

pay in wages. That will be rendered practicable—if it ever is—either by appeals to the good sense of employees or by the stern arbitrament of strikes and lockouts.

Government regulation, by forcing railway executives to apply their time, thought and energies to protecting rather than to improving their properties, is tending strongly to make railway operation inefficient. Railway managers, being human, cannot do two things at once. The more thought and energy they must give to defending the roads, the less they have left for devising methods for reducing operating expenses. As the *Railway Age Gazette* has said before, “not only does government regulation as now carried on hinder the higher officers from initiating plans for improving operation, but it also interferes with their giving adequate consideration to plans worked out by their subordinates; and, of course, the important schemes of subordinates cannot be carried out until they have been digested and approved by their superiors. The public needs to be reminded that for whatever reduces the efficiency or increases the cost of railway operation it must, in the long run, foot the bill in the passenger and freight rates that it pays, or in the impaired service that it will receive, or in both. The public will be much more apt to get improved service at reasonable rates if it gives the railway managers a chance to devote more time to the administration of their properties than if it continues to compel them to give so much of their time to the defense of them.”

But, after all, why, on the shippers' theory, should the railway managers be interested in the question of railway efficiency? The shippers take the ground that the railway is entitled to a fair return and no more, and that the railways of the United States as a whole are earning a fair return now. If this be true, what object can railway managers have in trying to increase efficiency of operation?¹ The only effect

¹ It has long been foreseen that, when this principle is established in the operation of any public utility, a large part of the incentive to economical and efficient operation is taken away. If a railway company saves money by conducting its operations with especial efficiency

would be to increase the earnings of the roads above a fair return and to invite reductions in rates and earnings. That would benefit the shippers, but it would not benefit the stockholders of the railways; and the railway managers' employment, their salaries and their promotions come from the stockholders. The application of the "fair return" theory to the railway business would be the surest way to deaden railway enterprise and prevent the economies which Mr. Brandeis claims could be made. The only public policy which will tend to promote railway efficiency will be for the government to say in effect to the railways that they must not charge higher than reasonable rates and that they must give good service, and that so long as they meet these requirements they will be allowed to earn profits as large in proportion as those earned in other businesses. The only incentive that has ever been effective in promoting efficiency in the management of concerns owned by private capital has been the hope and prospect of gain to the owners; and until human nature is revolutionized it will continue to be the only effective incentive.

and economy, and the only result of this economy is to bring about a reduction in the rates for carrying passengers and freight, it is self-evident that a chief incentive to saving is removed. Conversely, a railway may be so mismanaged that money will be wasted in any one of the hundred ways by which a railway's expense account may be swollen. If those responsible for such mismanagement can simply raise freight rates so that the net earnings will be maintained notwithstanding the increased expense, then we shall not only see an end to economy in the railway business but we shall open a wide door to all sorts of extravagance and graft, the cost of which will fall on the public.—From editorial in *Engineering News*, December 1, 1910.

THE NEW LONG AND SHORT HAUL LAW.¹

The railways have until February 17, 1911, to decide what they are going to do about the new long and short haul section of the Interstate Commerce act. The power given to the Interstate Commission by this section of the Mann-Elkins act is second in importance among the powers given by it only to that conferring on the commission authority to restrain advances in rates. There is a widespread impression that under the new law the commission can and probably will rigorously prohibit railways from making higher rates for shorter than for longer hauls except in the most unusual circumstances. It is desirable that this impression be corrected. The order issued by the commission on October 19, regarding the steps to be taken by the roads toward complying with the amended long and short haul section, gives no definite indication as to the specific policy that the commission intends to pursue in administering it, but it does seem to make plain that the commission will not try to enforce this section rigidly. For the commission to try to do so would be to disregard the clear intention of Congress, for a bill to prohibit railways from in any case charging more for a shorter than for a longer haul was introduced at the last session and defeated. The main difference between the section finally adopted and that in the original Interstate Commerce act is that the original act made it "unlawful for any common carrier . . . to charge or receive any greater compensation in the aggregate for the transportation of passengers or of like kind of property, *under substantially similar circumstances and conditions*, for a shorter than for a longer distance over the same line"; while the amended act strikes out the words *under substantially similar circumstances and conditions*, and

¹ An article in the *Railway Age Gazette*, November 25, 1910.

makes clearer the intention of Congress that before a railway may charge a higher rate for a shorter haul it must get the express consent of the commission. Until February 17 the roads may continue to make rates as they have heretofore. After that they must not charge a higher rate for a shorter haul unless they first get the explicit authorization of the commission, or invalidate the law by litigation.

While negatively it is clear that Congress did not intend the railways to be absolutely prohibited from charging a higher rate for a shorter haul, it is not clear when Congress meant that this might be permitted. There was a strong feeling that the existing method of making rates was wrong; but as to just what ought to be done to make it right the law-makers did not feel entirely sure, so they turned the whole job over to the commission. Under the old law some guidance was given to the commission by the words "under substantially similar circumstances and conditions." They plainly implied that where circumstances and conditions were substantially dissimilar a higher rate for a shorter haul might properly be charged. The fact that these words were deliberately stricken out by the Mann-Elkins bill shows that some substantially dissimilar circumstances and conditions which the courts have held to justify non-observance of the long and short haul principle do not justify it in the opinion of Congress. But under just what circumstances the long and short haul principle may be disregarded seems to be left by the act, if the fourth section be read alone, to be determined entirely by the commission.

Most railway lawyers do not believe, however, that if the question is ever litigated the courts will hold that the commission has such unlimited discretion. They contend that the railway has a property right in the beneficial use of its property. This includes the right to make any rate which is not unfairly discriminatory or unreasonable. They argue that there are certain conditions in which the fixing of a higher rate for a shorter haul is neither unreasonable nor unfairly

discriminatory. It follows that the right of a railway under such conditions to charge a higher rate for a shorter haul is a property right which cannot be taken away. If it be answered that the law does not absolutely take this right away, but gives the commission discretion to determine when it may be exercised, it is replied that this does not cure the defect in the provision. The commission is an administrative body of delegated powers. Congress cannot confer on such a body authority without laying down the rule by which it is to be guided in exercising it; and the new long and short haul section gives no such guidance.

On this theory the law cannot be upheld as constitutional unless it shall be read as a whole, and it shall be held that in some other part of it Congress has laid down the rule which is to guide the commission. It is contended that if the rule is laid down anywhere it is the first section, which requires rates to be reasonable for the service, and in the third section which prohibits them from being unfairly discriminatory. Under this interpretation a railway which desires to disregard the long and short haul principle must first apply to the commission. If the commission denies its application the road may appeal to the courts on the ground that the adjustment of rates it proposes to make would not be unreasonable or unduly discriminatory. And if the court finds that this contention is true, it will nullify the commission's ruling just as in previous years it nullified its orders when the courts differed from it as to whether certain circumstances were dissimilar within the intendment of the original Interstate Commerce act. On this theory the new long and short haul section differs from the corresponding part of the old law a great deal as that part of the new law giving the commission jurisdiction of rates in general differs from the one in the Hepburn act. Under the Hepburn act the commission had no control over the initiation of rates. It could act with reference to a raise in rates only after the raise had been made. Under the new

law it may restrain an advance until it has determined whether it is reasonable. Similarly, under the old law a railway might itself determine whether particular circumstances and conditions were sufficiently dissimilar to justify departure from the long and short haul principle and make rates accordingly, and the commission could not interfere with them until they were in effect. Under the new law the railways are prohibited from disregarding the long and short haul principle without first having got the consent of the commission; the railway cannot make an unreasonable or discriminatory adjustment and keep it in effect until some shipper complains and gets it changed.

Some lawyers are inclined to think that the courts may hold that Congress did give the commission complete discretion to determine whether a higher rate may or may not be made for a shorter haul, and that its action in doing so is constitutional. The decisions of the Supreme Court of the United States construing the long and short haul clause of the original Interstate Commerce act do not throw much light on the question; for practically all, if not all, turned on the meaning of the words "substantially similar circumstances and conditions," which are not now in the fourth section. But in 1901 the Supreme Court rendered a decision which is regarded as having more or less of a bearing on the matter. This was in the case of the *Louisville & Nashville vs. Kentucky* (183 U. S. 503).

The constitution of Kentucky contained a provision identical with the long and short haul clause of the original Interstate Commerce act, and the Kentucky legislature passed a law to give effect to it. The state railway commission, which was created by the state constitution, prohibited the railways from in any case disregarding the long and short haul principle without its express consent. The Louisville & Nashville disobeyed the commission's order and was prosecuted. It contended that the Kentucky law was unconstitutional on much the same grounds on which it is now contended that

the new federal long and short haul law is unconstitutional. The Supreme Court of the United States decided against the railway.

There are several important points, however, in which this case differed from any that could arise under the Interstate Commerce act. The Kentucky commission was created by the state constitution, while the Interstate Commerce Commission exercises only powers delegated to it by Congress. The long and short haul clause was in the Kentucky constitution, while the federal long and short haul clause is merely an enactment of Congress. The Kentucky law and the action of the commission administering it had been upheld by the Kentucky supreme court, and it is a familiar principle that the federal courts will uphold the interpretation put by a state court on a state law or constitution if this can be done without violating some provision of the federal constitution. The Kentucky constitution and the law passed to give effect to it laid down a rule for the commission to follow, by indicating that the long and short haul principle might be departed from where conditions were substantially dissimilar, while the present federal law does not lay down any such rule. It would seem that the only question on which the Kentucky case might be a precedent for a case arising under the existing federal law would be whether a law or an order of a commission which absolutely prohibits the charging of a higher rate for a shorter haul deprives a railway of its right of property to make reasonable rates. This question was directly raised in the Kentucky case, and the federal Supreme Court said:

"Though it be conceded that ownership in a railway is property, it is property of a kind that is subject to the regulations prescribed by the state. We do not wish to be understood as intimating that if, hereafter, the railroad commission should fix and establish rates of a confiscatory character, the company would be without the protection which courts of equity have heretofore given in cases of that description. What we now say is that a state corporation voluntarily

formed cannot exempt itself from the control reserved to itself by the state by its constitution, and that the plaintiff in error, if not protected by a valid contract, cannot successfully invoke the interposition of the federal courts, in respect to the long and short haul clause in the state constitution, on the ground, simply that the railroad is property." 183 U. S. 503, 513.

In other parts of its decision the court repeatedly indicated that it based its decision "upon the proposition that the company takes and holds its franchise and property subject to the conditions and limitations imposed by the state in its constitution." Now, of course, the same thing could not be said of any railway which contested the constitutionality of the federal long and short haul law, because no road has taken and holds its franchise and property subject to any such federal constitutional conditions and limitations.

In view of all these circumstances it seems improbable that the Kentucky case can be considered a precedent indicating what the Supreme Court will decide regarding the constitutionality of the new federal long and short haul clause. Of course, if it is a precedent, it indicates that the court will uphold the law. But A. P. Thom, general counsel of the Southern Railway, undoubtedly expressed the consensus of legal opinion when, at the hearing before the Interstate Commerce Commission on October 8, he contended that either the amended fourth section must be construed merely to give the commission the initiative to permit making of rates that are not unreasonable or unfairly discriminatory, or it must be held unconstitutional.

Probably, sooner or later the question of the constitutionality of the new long and short haul law will be fought out in the courts. Meantime, the disposition of most railway legal and traffic officers is to try to work out and agree with the commission on some adjustment of rates which will make possible the avoidance of litigation. Heretofore there have been some violations of the long and short haul principle

which cannot be defended on sound economic or ethical grounds, and there have been others which are defensible on these grounds but which seem so indefensible to the general public that in the long run the roads might gain by eliminating them from their tariffs. If, therefore, the commission does not lay down rules which seem to the railway officers altogether too drastic, there is ground to hope that some adjustment which will be reasonably satisfactory will be reached without litigation.

The cases where higher rates have been made for shorter than for longer hauls present the most infinite variety. The Supreme Court, in its opinion in the case of *East Tennessee, Virginia & Georgia et al. vs. Interstate Commerce Commission* (181 U. S. 1, 20), suggested a case where disregard of the long and short haul principle would be plainly unfair.

"Take a case," said the court, "where the carrier cannot meet the competitive rate to a given point without transporting the merchandise at less than the cost of transportation, and therefore without bringing about a deficiency which would have to be met by increased charges upon other business. Clearly, in such a case, the engaging in such competitive traffic would both bring about an unjust discrimination and a disregard of the public interest, since a tendency towards unreasonable rates on other business would arise from the carriage of traffic at less than the cost of transportation to the particular places."

As there are some examples of disregard of the long and short haul principle that are plainly indefensible, so there are many which are conclusively defensible. The best, of course, are those where railways meet active and controlling water competition at more distant points which they do not meet at intermediate points. The commission, even in its early attempts to administer the original Interstate Commerce act, never held that where water competition was active and controlling a lower rate might not be charged for a longer haul,

although it did differ from the roads about whether they could thus fix rates without its previous consent. The best examples of lower rates for longer hauls made to meet water competition are found in the southeast and on the Pacific coast. There has been nothing said or done to indicate that the commission will refuse to let the roads make lower rates from New York to San Francisco, for instance, or from New York to New Orleans, than to intermediate points. The law as it now stands not only gives the commission authority to say whether a lower rate may be made for a shorter haul, but also authorizes it "from time to time to prescribe *the extent to which such designated common carrier may be relieved from the operation of this section.*" The theory on which the railways have acted in the past has been that where water competition was controlling they could make any difference between the water rates and the rates for the longer and the shorter hauls that they liked so long as the rate for the longer haul was not positively unremunerative and the rate for the shorter haul was not excessive. It is evident, however, that the commission now has—whether it had before or not—the authority to limit the amount of the discrimination which may be made between the intermediate and the more distant points.

Of course, the defense advanced for the distinction made between the more distant and the intermediate points in cases such as this is that the railways do not make the rates to the more distant points. The water lines make them. They must meet the rates fixed by the water lines or go out of business at the more distant points. But because competition forces them to accept a lower rate to the more distant point than they otherwise would is no reason why they should be prevented from charging a reasonable rate, even though a higher one, to the intermediate point. They could not afford to make rates as low in proportion on all of their lines as they make to meet water competition. If they were required to do this they would have in many cases to refrain from

meeting water competition. The result would be that they would lose any profit that they make by hauling traffic to the more distant point, and, in order to earn a fair return, they might have to raise their rates to the intermediate points; in any event, the enforcement of a rigid long and short haul rule would be of no benefit to many intermediate points.

One fact very commonly overlooked is that the railways of the United States do not encounter water competition from river and coastwise water lines alone. Ocean steamships carry a large amount of grain from the Pacific coast around Cape Horn to Europe. There are times on the return trip when they can hardly get enough traffic for ballast. In consequence, they make very low rates from Europe to the Pacific coast on many bulky commodities. One of these is cement, which they carry in large quantities from Belgium. To meet this competition the railways make a very substantially lower rate on cement shipped from Hannibal, Mo., and Buffington, Ill., to the Pacific coast than to intermediate points. They could not make their present coast rates their maxima. If they were required to do so they would simply quit hauling cement to the coast and the Belgian producer would get all the business.

A good example of lower rates for longer hauls made to meet both rail and water competition that really covers the entire earth is afforded by the rates on grain and its products. Flour shipped from the United States to Liverpool meets there the competition of wheat and flour hauled there by rail and water from Canada, Russia and Argentine. It must be laid down there at a freight rate which will enable it to be sold at a profit. To enable the American producer to meet the competition in the markets of the world the rate on flour for export from Minneapolis to New York is made 21½ cents, while the rate to interior points is higher—to Paterson, N. J., for instance, it is 25 cents.

Still another example of the same kind is afforded by the rates made by the Chicago, Milwaukee & St. Paul on cotton

piece goods moving to the Orient. The rates from different places vary, but, generally speaking, it may be said that the rate from points in the Southeast to Spokane is \$2.50; to the Pacific coast, \$1.32, and that the proportion of the through rate received by the St. Paul and its connections on cotton piece goods moving from the Southeast to the Orient is 94 cents. The reason why the lower proportional rate is made on goods moving to the Orient is that these goods may move either westward through the United States and across the Pacific ocean, or eastward over the Atlantic ocean and through the Suez canal to the Orient. The other transcontinental railways formerly made lower proportional rates on goods moving to the Orient than to the coast, but when they were required to publish the inland proportions of these rates they raised them to the same basis as the Pacific coast rates, rather than disclose to the public what revenue they had been getting from Oriental business. The St. Paul has been able to get a good deal of this business since it became a transcontinental line.

On economic grounds the justification for making lower rates for longer hauls when, as in these cases, it is absolutely necessary in order to meet competition not only with coastwise steamships but with ocean steamships moving over all the waters of the earth, seems complete. The German state railways and other railways of Europe also make lower rates on export than on domestic business. Nevertheless, the course of the railways of the United States in thus making rates has been the object of bitter criticism. It is an interesting question to what extent some of the roads will continue to make rates in this way, even if they get the consent of the commission—and if not its consent, that of the courts—to do so. The western transcontinental lines are confronted by the fact that in a few years the Panama canal will be done and that then the coastwise steamships can make much lower rates between the Atlantic and Pacific coasts than now. Furthermore, it is doubtful if the bitter sentiment the exist-

ing rate adjustment has excited against the roads can ever be changed except by a change in the method of making rates. The Interstate Commerce Commission in the various Pacific coast rate cases has held that the rates of the railways to intermediate points are unreasonable per se. Furthermore, as the Panama canal soon will be finished, it seems to some railway officers desirable that any discriminating done in future should be in favor of the interior country, since the railways will always get all of the traffic there, while they are apt to have to fight harder and to make lower rates for the coast traffic. In these circumstances, it seems worthy of consideration whether the roads would not gain in the long run by raising their rates to the coast to a basis where they would be reasonable regardless of water competition. With rates made on this basis they would be able to get some traffic from the Eastern seaboard to the coast, for some traffic will seek the railway rather than the waterway even though the railway rate is much higher. On the other hand, there is no doubt that if the railways raised their coast rates they would lose a very large part of their traffic from the Eastern seaboard to the coast. But some railway officers are a little inclined to think that what they would lose in this way would be less than they will lose in the long run by continuing to make extremely low rates to the coast, which may be invidiously compared with their relatively higher rates to the interior.

As is well known, the rates of the roads to the coast have been blanketed from the Eastern seaboard back to the Missouri river. In other words, lower rates have been made from Chicago, for example, to the coast than to intermediate points as well as from New York. This has been done to enable manufacturers and jobbers in the Middle West to compete with Eastern manufacturers and jobbers for business on the Pacific coast. In other words, it has been due to commercial competition. The Interstate Commerce Commission has pretty clearly indicated to the railway officers that the

commission would not approve of the continuance of this method of rate-making, and has intimated that Chicago should be used as a dividing line and that, while from points east of it rates may continue to be made lower to the coast than to intermediate points, from Chicago and points west of it the railways must desist from making lower rates to the coast than to the interior. To draw the dividing line at Chicago would be rather arbitrary. Starch now moves in considerable quantities from Keokuk, Iowa, which is west of Chicago, to the Atlantic and thence by boat to the Pacific coast. South Bend, Ind., is only a short distance east of Chicago, and yet when the transcontinental lines a short time ago raised the rate on wagons from South Bend to the Pacific coast from \$1.25 to \$1.35 they found this change was sufficient to cause the traffic to begin to move to the Atlantic and thence by boat to the Pacific coast. In consequence, they restored the old rate. But, no doubt, the commission feels that if a line is to be drawn at all it must be drawn arbitrarily, and that Chicago is as good a place to draw it as anywhere. If this is done the rates from Chicago to the coast will have to be made the maxima to intermediate points. This would make it necessary for the roads to reduce all of their rates to intermediate points to the basis of their present coast rates, for the commission has held that any higher rates to Spokane from the East than those now made to the coast are unreasonable. On the other hand, it would not prevent the roads from raising their rates to the coast. If they reduced their rates to the interior and at the same time raised their rates to the coast they would suffer for some time a very heavy reduction in revenue from both their interior and their coast traffic, which would have to be made good—if it ever were made good—by an increase in the traffic to the interior.

The difficulties which the southeastern lines would meet in complying with a rigid long and short haul rule are perhaps even greater than those which would be met by the transcontinental lines. Not only are the southeastern states com-

pletely bounded on the east and south by the Atlantic ocean and the gulf of Mexico, but there are many navigable rivers running from the ocean and the gulf into the interior. The roads have been able heretofore to hold their own against the waterways because they have been permitted to make lower rates where they have met water competition than where they have not. In its earlier decisions—for example, in the case of Board of Trade of Troy, Ala., *vs.* Alabama Midland—the commission held that water competition which was merely potential did not justify disregard of the long and short haul principle. If the commission should so rule now and the courts should uphold it, the southeastern lines would have to choose whether they would reduce all their intermediate rates or raise their rates to the more distant points. If they adopted the former alternative, their revenues from their local business would be heavily reduced. If they adopted the latter alternative they would at once attract water competition. The water competition might then become active and controlling, in which event, under the old ruling of the commission, the roads would be justified in reducing their longer haul rates once more. If by this reduction they succeeded in destroying the water competition once more they would be placed in a peculiar predicament, for the Mann-Elkins act put into the Interstate Commerce act an entirely new provision regarding water competition. This appears in section four, and is as follows:

“Whenever a carrier by railroad shall in competition with a water route or routes reduce the rates on the carriage of any species of freight to or from competitive points, it shall not be permitted to increase such rates unless after hearing by the Interstate Commerce Commission it shall be found that such proposed increase rests upon changed conditions other than the elimination of water competition.”

Now, the water competition having ceased to be active, it would seem that under the rule laid down by the commission in its earlier decisions the roads would have to quit making

lower rates for the longer hauls. But they could not raise rates which had been made to meet water competition without proving that there had been some change in the conditions besides the elimination of water competition. It would seem that in that event if the commission stuck to its old rule, and the law were not modified, the southeastern railways would have no alternative but to reduce all of their intermediate rates. It will be recalled that the Supreme Court in its decision construing the original Interstate Commerce act overruled the commission, and held that where water competition actually had existed and would revive if railway rates were raised there existed a dissimilarity of circumstances and conditions which authorized the railway to make a lower rate for the longer haul. In view of these decisions of the courts and the changed personnel and greater experience of the commission, it seems not improbable that the commission may hold in construing the Mann-Elkins act that where potential water competition exists it justifies a lower rate for a longer haul, although it is easily conceivable that it may rule now as it did originally. In that event there would most certainly be litigation with the railways in the southeast, as their traffic is still so light that they could not stand very heavy reductions in their earnings.

In addition to effective and controlling water competition, it has been generally recognized that where one of two railways running between competitive points has a substantially longer line than the other, it is justified in meeting the rates made by the shorter line between the competitive points, while charging higher rates to intermediate points. The defense of the practice is the same in this case as where a railway meets controlling water competition at one point which it does not meet at another point. The only place, it is believed, where the long and short haul rule has been consistently and rigidly enforced is in Iowa. The popular notion is that where this is done all of the intermediate rates will be reduced so that they will be no higher than the rate via

the long line for the longest haul. This has not been the result in Iowa. In that state the longer line between any two points, in preference to decreasing its earnings by reducing its intermediate rates, has usually refrained from meeting the rate of the shorter line to the competitive point. The effect has been to keep the longer line from getting any profit that it might have derived from the competitive business and to deprive the people at the points where there are more than one road from getting any of the benefits of competition. Who benefits and who is hurt by this policy depends mainly on how much difference there is between the lengths of the competing roads. In many cases a road which is longer than a competing line between two points is shorter than the same line between two other points, and what it loses by not competing between the two former places it gains by its competitor refraining from competing between the two latter. But it seldom happens that the advantages and disadvantages of a road balance each other. There are some roads which are the short lines between most competing points and other roads which are the long lines between most competing points. Obviously, in these circumstances, rigid enforcement of the long and short haul rule will benefit the former and the shippers living on them and injure the latter and the shippers living on them, for the long line, being unable in many cases to make rates to the competitive points, must get its revenue mainly from its local traffic, which involves the necessity of making high rates on this traffic. Whether a long line will, where the long and short haul rule is rigidly enforced, meet the rates of the short line at competitive points and reduce its local rates, or will refrain from meeting competition and keep up its local rates, depends largely on the relative amounts of the local and the competitive traffic. If the terminal points are large cities, such as Kansas City and Chicago, or St. Paul and Chicago, it probably will prefer to stay in the competitive business and reduce its local rates. On the other hand, where, as in Iowa, there

is no very great difference between the sizes of the various cities, the opposite policy is apt to be adopted.

While railways under the conditions existing in Iowa may submit without a determined contest in the courts to the enforcement of a rigid long and short haul rule, because the amount that they lose by it is relatively small, it seems inconceivable that they would do so where the amount involved was very large. For example, the Chicago & North Western and the Harriman lines between Chicago and Spokane are much longer than the Hill lines. For the former either to make their rates to Spokane their maxima to intermediate points or to quit meeting the competitive rates to Spokane would involve loss of a large amount of revenue; and it is not conceivable that in such circumstances railways would submit to enforcement of the long and short haul rule without a stubborn legal contest. It is worth noting in this connection, also, that while, where the amount that a railway will lose by applying the long and short haul rule is small, the courts might not hold that enforcement of it was unconstitutional, enforcement of it which would involve the loss of a large amount of revenue might be held confiscatory of the property of the longer line.

The main prerequisite to a satisfactory settlement of the long and short haul question—as well as of all other important railway questions—is that the public shall get the railway's point of view, and the railways the public's point of view. Persons without any special knowledge of railway affairs who discuss violations of the long and short haul principle usually talk as though they think the discriminations railway managers make between communities are willful and malicious. A little thinking would convince them this is not true. The railway manager is equally interested in the development of all the communities along his lines, and he naturally would rather get the same or a higher rate for a longer as for a shorter haul, simply because the longer haul costs more, and because the practice of charging lower rates for

longer hauls excites public discontent. It ought to be clear, therefore, that when a lower rate is made for a longer haul there must be conditions beyond the control of the traffic manager which prompt, or even compel, him to do so, and the public ought to study and understand these conditions before in any given case it condemns this method of rate-making.

On the other hand, it is daily becoming clearer that railways cannot be managed solely according to the principles which their managers believe to be right. Railway managers ought to do all that they can to educate public sentiment, so that the public will be able to form a fair and intelligent opinion of the effect on the public interest of the policies followed by the roads. Where laws are passed which wantonly attack the constitutional rights of the railways they are, no doubt, justified in litigating them. But if satisfactory relations are ever to be established between the railways and the public, the railway managements must recognize the fact that some things which it would be right and desirable for them to do if the public could be made to see that they are right and desirable may become wrong from the railway and the public standpoint when the public persistently and uncompromisingly condemns them. There are many discriminations in rates which railway men believe operate to the public good but which the public—often ignorantly—condemns. If the public cannot be convinced that such discriminations are right, it may be better to desist from making some of them, provided the railway can do so without reducing its profits below a fair return. The result of antagonizing public sentiment in regard to some matters of this kind is to provoke attacks on the railways which may in the long run cause them and the public more loss than the railways and the public would suffer from the railways complying with some of the public's unreasonable demands.



